



An Roinn Iompair  
Department of Transport

# National Cycle Network Plan

Report 2023





## Acknowledgements

The National Cycle Network (NCN) Plan was prepared by Transport Infrastructure Ireland (TII), supported by AECOM Ltd, on behalf of the Department of Transport.

The project team would like to acknowledge the advice and assistance received from the various members of the Project Board, the Project Advisory Group and the Project Technical Group representing the Department of Transport, the National Transport Authority (NTA), the County and City Management Association (CCMA), Westmeath County Council and TII.

The project team would also like to acknowledge the inputs from the various stakeholders who contributed positively to the development of the NCN Plan.

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## Foreword

The Government is committed to ensuring Ireland plays its part in global climate action efforts. To this end, the Climate Action Plan 2023 (CAP23) sets out a roadmap for taking decisive action to halve Ireland's emissions by 2030 and reach net zero no later than 2050.

Achieving these ambitions will require a coordinated effort across Ireland and every economic sector will have to play its part. Transport, as the largest source of energy-related CO2 emissions in Ireland, is the focus of significant decarbonisation efforts. This is recognised in the National Development Plan, which dedicates €1bn towards decarbonisation of transport in the period up to 2030. This is complemented by a new hierarchical approach to transport provision, which prioritises active travel and public transport investment. The commitment to spend €360m a year on walking and cycling and the 2:1 ratio of public transport investment to road infrastructure investment are fundamental in achieving this change.



In support of this, we published the National Sustainable Mobility Policy in 2022 setting out a strategic framework for active travel and public transport to deliver at least 500,000 additional daily active travel and public transport journeys by 2030.

Active modes are the most sustainable modes of transport and enabling people to walk or cycle for their daily journeys is a key element in meeting our decarbonisation targets. For this to happen, we need to provide them with a safe and reliable alternative to using the private car.

That is why, in 2021, I requested Transport Infrastructure Ireland (TII) to develop a plan for a new National Cycle Network (NCN). TII's remit was to develop a plan for an inter-urban cycle network (incorporating the regional and national greenways network, as appropriate), with a view to enabling greater levels of cycling and walking amongst leisure users, tourists, and commuters.

The National Cycle Network outlined in this plan represents a step-change in active travel infrastructure in Ireland. The NCN Plan sets out a phased programme that will see the delivery of approximately 3,500km of cycle facilities by 2040.

Together with the National Transport Authority's CycleConnects programme, the NCN will provide a comprehensive network of high-quality cycle infrastructure to promote safety, comfort, and increased participation in cycling. It will make a significant contribution to Ireland's commitments to sustainability and decarbonisation and will generate benefits for cyclists and communities across Ireland.

The Government is deeply committed to its efforts to decarbonise transport. I firmly believe that through our collective efforts, we can deliver on our climate objectives and that the NCN represents a significant step in that direction.

**Eamon Ryan TD,**  
**Minister for Transport**



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# Executive Summary

## Background

In 2021, following a request from the Minister for Transport, Transport Infrastructure Ireland (TII), on behalf of the Department of Transport, initiated a project to develop a plan for a new National Cycle Network (NCN). TII's remit, designated by the Department of Transport, included the development of a plan for an inter-urban cycle network (incorporating the regional and national greenways network, as appropriate), with a view to facilitating increased cycling and walking nationally for education, leisure, tourism and commuting trips.

The development of a national-scale cycle network has taken on greater significance in the context of the subsequent publishing of the Climate Action Plan (2023), which calls for a significant reduction in transport emissions by 2030 with measures aimed at enabling 500,000 extra walking, cycling and public transport journeys per day.

## NCN Plan

The planned NCN, presented below, links cities and towns of over 5,000 people with a safe, connected and inviting cycle network. One of the most ambitious and wide-reaching infrastructure plans in the history of the State, the proposed cycle network of approximately 3,500km will connect more than 200 settlements and 2.8m<sup>1</sup> people. The NCN will link to destinations such as transport hubs, centres of education, centres of employment, leisure, and tourist destinations with the intention of facilitating greater cycling and walking amongst students, leisure users, tourists, and commuters alike.

As well as contributing to Ireland's commitments to sustainability and decarbonisation, successful implementation of the NCN Plan will provide many benefits for cyclists and communities across Ireland, including:

- Ensuring delivery of a high-quality cycle network which will promote safety, comfort and increased participation in cycling.
- Improving sustainable connectivity nationally and providing links with other networks such as CycleConnects, EuroVelo and Northern Ireland networks.
- Supporting both urban and rural economies through increased leisure and tourism cycling.
- Improving public health through well documented benefits of active travel.
- Guiding how local authorities prioritise exchequer-funded investments in cycle infrastructure.
- Making use of existing infrastructure wherever possible including greenways, road infrastructure, and declassified roads where safe and inviting cycle experiences can be provided.

The NCN aligns with the NTA's CycleConnects programme of urban and county-level cycle networks, as well as other cycle routes and networks in various stages of development, including the EuroVelo routes, national and regional greenways, and the Strategic Plan for Greenways in Northern Ireland.

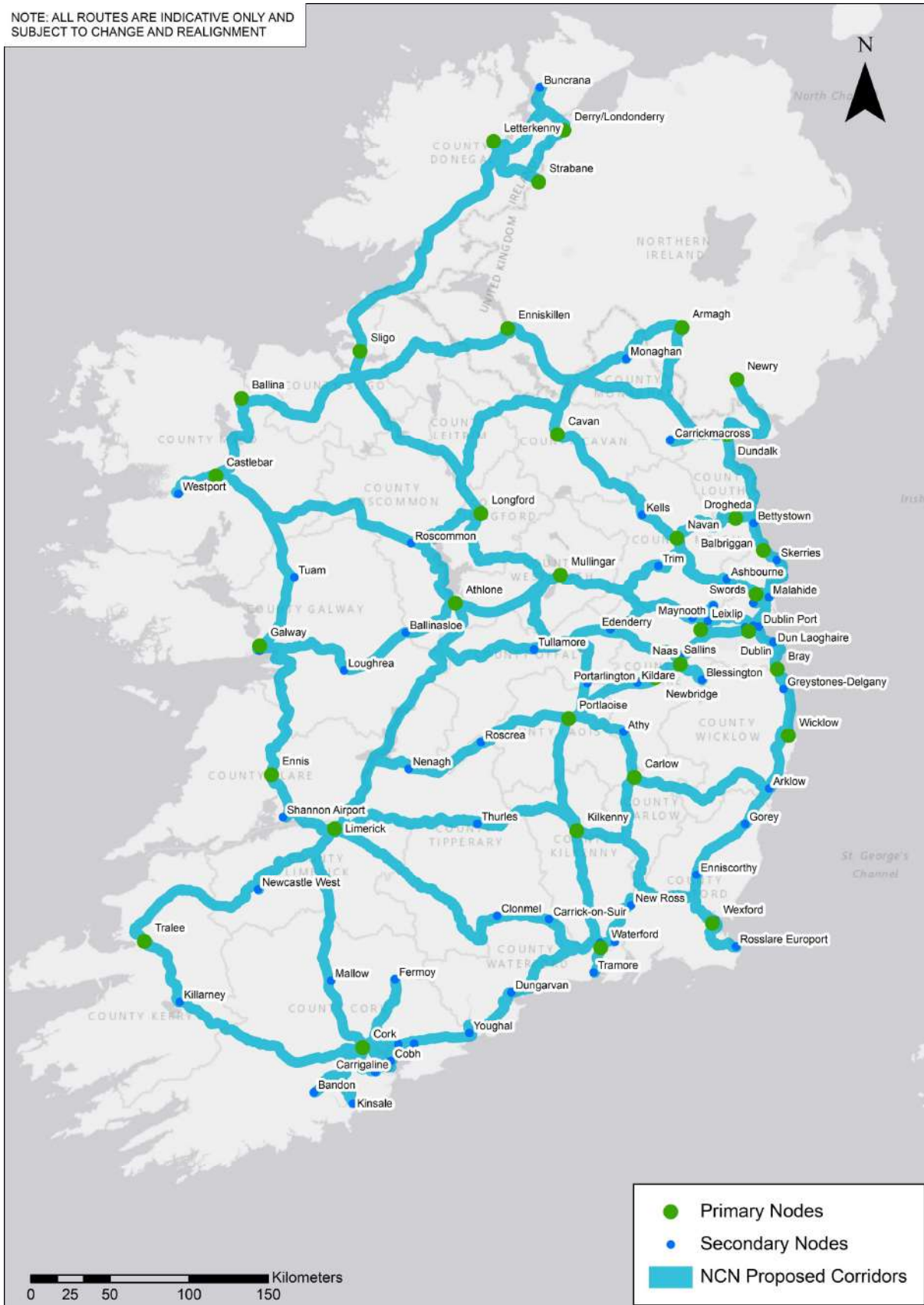
The NCN Plan complements other networks and establishes a core spine of infrastructure to encourage further development of cycling projects in the future, thereby optimising the potential for people to cycle as part of their daily activities, such as travel to work or education.

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<sup>1</sup> Based on the 2016 Census



NOTE: ALL ROUTES ARE INDICATIVE ONLY AND SUBJECT TO CHANGE AND REALIGNMENT





## Implementation

To ensure successful delivery, the NCN should be planned and delivered as a single programme, rather than a series of inter-related projects, to ensure a coherent and integrated approach. The focus of the implementation programme should be on providing a coherent network, with regional balance. This will need to be supported by a branding and marketing campaign to raise awareness and encourage active trips and engagement with the network.

Implementation of the NCN Plan will be across three phases from 2023 to 2040, as shown below. Various corridors have been assigned to a delivery phase following a multi-criteria assessment, which considered a range of factors, including; potential demand along each corridor, corridor length, network coherence, safety and social benefits.

	Phase 1 (2023-2025)	Phase 2 (2026-2030)	Phase 3 (2031-2040)	Total
<b>Approx. kilometres delivered</b>	330km	660km	2,510km	<b>3,500km</b>

An overall indicative cost estimate for the implementation of the NCN Plan is between €1,490m and €1,910m, depending on the breakdown of infrastructure types used across the network. Based on these cost assumptions, approximately €30m will be required to upgrade the existing infrastructure to the NCN design standard, including additional signage. The cost of planned greenways is €940m while the remaining infrastructure would cost between €520m and €940m, depending on the type of infrastructure delivered.

Successful delivery of the NCN will rely on clear governance over its implementation and ongoing management. It is recommended that a single entity provides direction, oversight, and management of the delivery of the overall network. This entity could be Department of Transport, or an existing or new authority reporting to the Department.

## Vision and Objectives

At the outset of the plan development, a vision and set of key objectives were developed, informed by a comprehensive policy review and stakeholder consultation.

The vision of the NCN Plan is to *"Develop a safe, connected, and inviting cycle network between urban areas and key destinations to achieve accessible, sustainable, and high-quality routes that will help to reduce the carbon impact of transport and promote a healthy and inclusive society."*

The NCN Plan objectives, presented below, were developed to deliver the vision of the NCN, ensure consistency with national and regional policy objectives and provide a framework for assessing network corridor options and the impact of the NCN.

National Policy	Policy Goal	NCN Plan Objective	
<b>Combat climate change &amp; improve air quality</b>	1. Reduce emissions from transportation by supporting a modal shift from private vehicles to cycling and walking.	1.1	Increase the number of cycle trips by improving the provision of safe and attractive cycle infrastructure.
		1.2	Enhance and protect local environments and biodiversity (e.g., pollinator plans, green corridors).
<b>Healthy living</b>	2. Encourage active travel for daily activities and recreation.	2.1	Connect to strategic destinations outside of urban areas as appropriate (including centres of education, centres of employment, and leisure destinations).



National Policy	Policy Goal	NCN Plan Objective	
		2.2	Support the development of cycling and walking culture in Ireland.
<b>Regional accessibility and economic development</b>	3. Support connectivity and economic growth of regional urban areas of 5,000+ population as well as priority tourist destinations.	3.1	Connect identified urban areas of 5,000+ population and those urban areas listed in the NTA's urban cycle network strategy.
		3.2	Connect to strategic destinations outside of urban areas as appropriate (including transport hubs, centres of education, centres of employment and, tourist leisure destinations), as appropriate.
		3.3	Integrate with existing and proposed cycle infrastructure (including greenways, safe routes to schools, the EuroVelo network, Interreg projects), as appropriate.
		3.4	Integrate with existing and proposed cycle infrastructure in Northern Ireland, as appropriate.
<b>Safety &amp; accessibility</b>	4. Propose safe and accessible infrastructure that encourages modal shift and limits interactions with other vehicles.	4.1	Encourage use of off-road infrastructure, where appropriate.
		4.2	Where efficient and effective, encourage routes that use 'quiet', low traffic volume roads.
		4.3	Promote the design of cycle infrastructure that is fully accessible to all users, regardless of age or ability.
		4.4	Promote the design of cycle infrastructure that meets safety requirements.
		4.5	Promote the design of cycle infrastructure that provides a safe and secure environment for all users.
<b>Prudent use of public funds</b>	5. Ensure appropriate balance between value for money and quality of outcome, in terms of potential impact on mode shift.	5.1	Propose corridors to maximise the number of users.
		5.2	Incorporate existing greenways, disused railways, canals, bypassed national roads, regional and local roads, long distance trails, as appropriate.
		5.3	Maximise the use of publicly owned land, where possible.
		5.4	Provide a framework to support the targeted investment in associated active travel projects.
		5.5	Take lessons from best practice internationally in development of national cycle networks, particularly the UK and EU high-cycling countries.
		5.6	Future-proof cycle route capacity, taking account of population growth and additional demand from modal shift.





## Collaboration

Led by TII, development of the NCN Plan was a collaborative process that involved many key stakeholders. Delivery partners, involved at all key stages of plan development, included the Department of Transport, the National Transport Authority (NTA) and the County and City Management Association (CCMA). Consultation with other key stakeholders and with the public was also a key element of the NCN Plan development.

## Information Gathering

The development of the NCN Plan was informed by a comprehensive background research exercise. This included:

- Market Research was undertaken to establish a clear understanding of potential users of the NCN and their needs. This entailed an academic review of publicly available papers, articles and reports and a nationally representative survey, to understand the different potential market segments, including commuting, leisure, and tourism trips and their requirements for the NCN.
- An assessment of international best practice which looked at examples of national cycle network planning and implementation in three countries; Denmark, the UK and Hungary. The review was undertaken with a view to identifying key lessons learned that could inform the development of the NCN Plan.
- An inventory of existing cycling networks was undertaken to collate information about existing strategic cycle infrastructure across Ireland. This was used as a starting point for network development, so that the NCN could be specified to utilise as much of this infrastructure as appropriate and where possible.
- Case studies of best practice in cycling infrastructure design were assessed. This included review of cycle network design guidelines / requirements currently in place in Germany, the UK, and the Netherlands, with a view to determining appropriate design principles for the NCN.

## Network Development

Development of the proposed NCN was an iterative process. The first step was to identify the destinations that would be served by the network. These are referred to in the plan as “nodes” and include towns, settlements or other key destinations representing a start, end or layover point on the NCN. Three broad types of node were defined, as follows:

- Primary, consisting of cities and / or large towns with a population of over 20,000 people.
- Secondary, consisting of medium sized towns with a population of between 10,000 and 20,000 people, as well as major tourist attractions outside urban areas.
- Other nodes, including small towns and settlements of less than 5,000 people, and strategic destinations (e.g. transport hubs, centres of education, centres of employment, leisure destinations, and tourist destinations).

Thresholds for these nodes were agreed following discussions with project stakeholders.

Appropriate connections between nodes were identified and developed. Initially, straight line “links” were used to identify which nodes would be connected with other nodes. These links were then further refined as “corridors”, which were more detailed potential connections between nodes. These considered factors such as existing or already proposed cycling infrastructure, as well as other potential connections to smaller settlements or tourist destinations, for example.

Where multiple potential corridors were identified to connect two nodes, an option assessment was undertaken using a set of criteria that determined which option performed best with respect to the overall NCN Plan objectives. The outcome from this was an initial proposed network of nodes and corridors.

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The identified NCN corridors are approximately four kilometres in width. On each corridor, the next step will be to undertake an options identification and assessment to determine a preferred route.




Environmental considerations and evaluation were integral to the development of the NCN Plan. In addition to integrating environmental and biodiversity matters in project objectives and plan development, both a Strategic Environmental Assessment and Appropriate Assessment of the Plan were undertaken.

The initial proposed network was presented to stakeholders via a series of workshops, and the general public via an online consultation portal in May and June 2022, which generated over 1,400 submissions. The feedback received validated the approach taken to developing the network, and the proposed network itself. It also provided important input which was then incorporated into the final proposed NCN presented in this report.

## Design Principles

The NCN Plan does not include specific design details regarding NCN corridors. However, one of the key factors to successful delivery of the NCN is that it should provide a consistent user experience nationally. It is therefore important to define the types of infrastructure that are considered appropriate for use on the NCN.

Two infrastructure types are outlined in the NCN Plan; Preferred and Potentially Acceptable. The defining characteristic of the preferred infrastructure types for the NCN, outlined below, is that they are segregated, allowing cyclists to travel in their own space, away from road vehicles with a higher level of safety and comfort. By providing safe, segregated cycle infrastructure the NCN will increase cycling confidence contributing to an increase in both the number of active cyclists, and overall cycle trips.

Type	Suitable Location	Example
Cycle Trail	Rural & Urban	
Off-Road Cycleway (cycle track)	Rural	
Standard Cycle Track – one-way, two-way and raised or behind verge	Urban	



While every effort should be made to ensure the preferred infrastructure types are delivered, it is also acknowledged that this may not be possible in all locations / situations. For cases like this, a list of potentially acceptable infrastructure types have been identified and their suitability for use will be determined on a case-by-case basis.

### **Monitoring, Evaluation and Learning**

The NCN Plan is one of the most ambitious cycle infrastructure plans in the history of the State and will require considerable investment to deliver. Monitoring, evaluation and learning will be a fundamental component of establishing and measuring how this investment will impact on travel behaviour. This in turn will provide metrics for determining the impact of investment and lessons learned for ongoing delivery.

A preliminary framework has been developed to provide a structure to monitor the continuous improvement of infrastructure design, development, and operation as the Plan is implemented.

# Introduction





# 1 Introduction

In 2021, following request from the Minister for Transport, Transport Infrastructure Ireland (TII), on behalf of the Department of Transport, initiated a project to develop a plan for a new National Cycle Network (NCN). TII's remit included the development of a plan for an inter-urban cycle network (incorporating the regional and national greenways network, as appropriate), with a view to facilitating greater cycling and walking amongst leisure users, tourists, and commuters. The development of a national-scale cycle network has taken on greater significance in the context of national policies which recognise Ireland's declaration of a Climate Emergency in 2019. In particular, the State's legally binding commitment under the Climate Action and Low Carbon Development (Amendment) Act 2021 to pursue and achieve a target of net-zero greenhouse gas emissions no later than 2050 (i.e. our National Climate Objective). This is further emphasised by the carbon budget programme and sectoral emissions ceilings established by Government to ensure 51% GHG emissions abatement by 2030.

In line with these national commitments, the Climate Action Plan 2023 highlights the need to facilitate a 50% increase in daily walking and cycling journeys as part of the transport sector's own decarbonisation pathway, where the sector is required to halve its emissions from its 2018 baseline of 12.2 MtCO<sub>2</sub>eq. to 6.1 MtCO<sub>2</sub>eq by 2030, in line with the sectoral emissions ceilings established by Government in July 2022

To support these targets, the NCN Plan has been designed to connect urban areas to each other and to strategic destinations (including transport hubs, centres of education, centres of employment, leisure destinations, and tourist destinations). Its development has been informed by an understanding of future users needs through an iterative process of consultation and collaboration with relevant stakeholders and delivery partners; particularly the Department of Transport (DoT), the National Transport Authority (NTA), and local authorities, and through consultation with other key stakeholders and with the public.

## 1.1 NCN Scoping Study

A National Cycle Network Scoping Study undertaken by the National Roads Authority (now TII) in 2010 identified and mapped a proposed national cycle network. The study involved detailed engagement with numerous stakeholders and local authorities nationally and proposed national cycling route corridors. The approach and findings of this study provide valuable insights which are still applicable.

As part of the development of the NCN Plan, a review of the 2010 National Cycle Network Scoping Study was undertaken at the outset to investigate how it aligns with current requirements, and to determine how it could be used as a valuable input to inform the development of the plan.

The purpose of the 2010 Scoping Study was to outline the reasoning behind selecting specific route corridors in the 2010 proposed NCN. The study included a route corridor assessment and proposed network, illustrated in Figure 1.1. The study outlined the following vision for a National Cycling Network:

*"Develop a National Cycle Network that will allow users to cycle between the main urban areas throughout the country. The network will be built to best practice standard, follow routes that maximise the number of potential users and its attractiveness to users, facilitate access for all, and ensure that short and long trips can be engaged in. The routes will, where possible, avail of existing routes and State-owned lands, share use with walking and form the basis for linkages to more comprehensive rural and urban local networks".*

Although the scope and structure of the NCN Scoping Study and the NCN Plan do not match precisely, many of the elements from the Scoping Study have an equivalent element in the NCN Plan, as summarised in Table 1.1. Comparison between the various elements illustrates a high-level of compatibility between the 2010 Scoping Study and the current NCN Plan. Both aim to attract as many leisure cyclists and commuters as possible, maximising the extent of off-road facilities, while utilising as much existing infrastructure as possible.

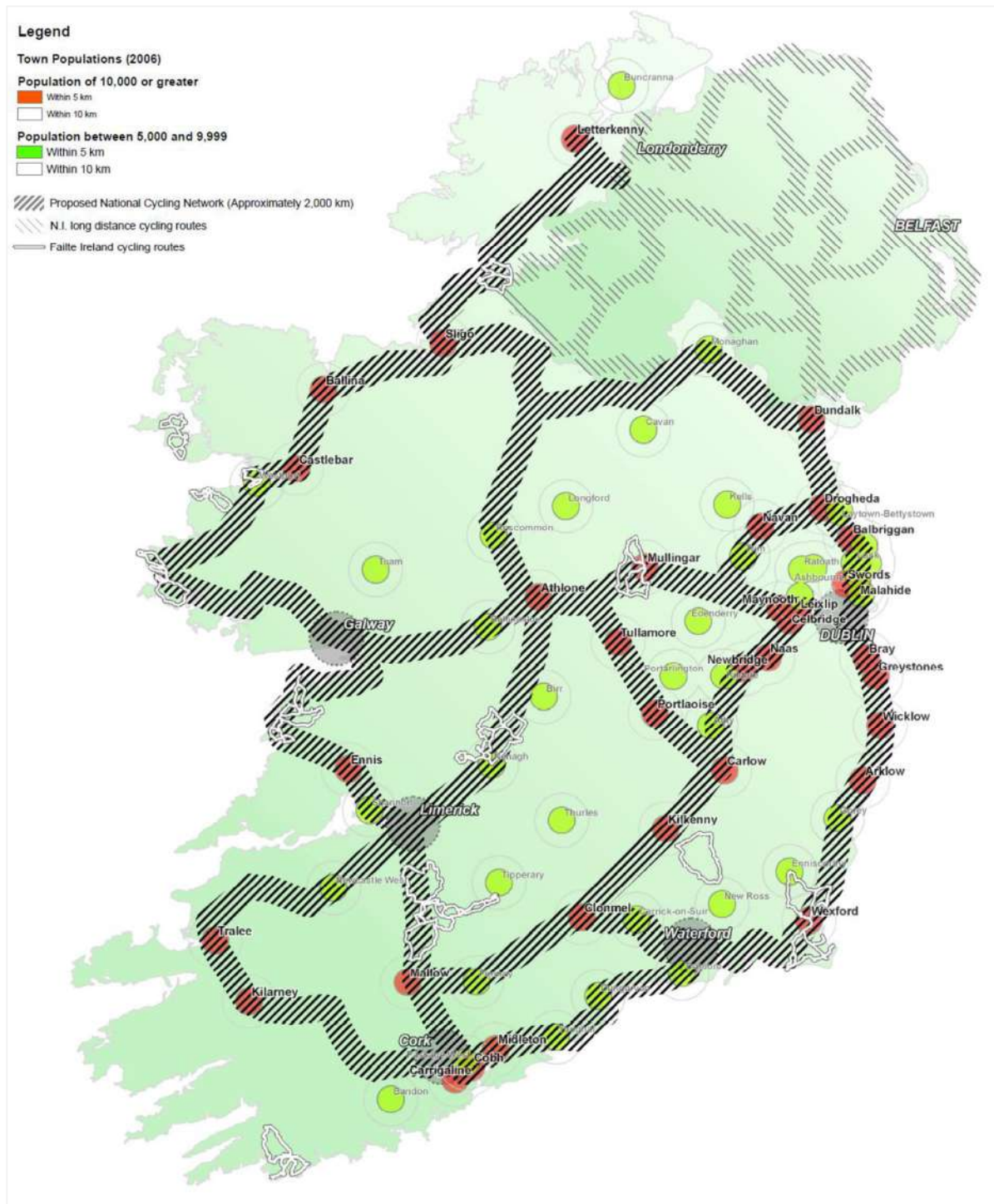


Figure 1.1: Proposed National Cycle Network from 2010 Scoping Study



Table 1.1: Comparison between 2010 Scoping Study and NCN Plan

2010 Scoping Study Terms of Reference (TOR), Vision and Route Corridor Criteria (RCC)	NCN Plan Objectives (Obj)
Provide the basis for a fully integrated network of rural interurban cycle routes. (TOR)	Increase the number of cycle trips by improving the provision of safe and attractive cycling infrastructure. (Obj)
Route corridors must connect the major cities and settlements of greater than 10,000 population in order to attract the maximum number of users. (RCC)	Connect identified urban areas of 5,000+ population and those urban areas listed in the NTA's urban cycle network strategy. (Obj)
The network should appeal to as many users as possible and should form the basis of linkages of both local rural cycle routes and urban connectors. (TOR) The network should facilitate commuter, leisure and tourism usage. (RCC)	Connect to strategic destinations outside of urban areas as appropriate (including centres of education, centres of employment, and leisure destinations). (Obj) Propose corridors to maximise the number of users. (Obj)
The network should cover all parts of the country and align with tourism and economic development. (TOR) Route corridor should be located in or connect to the proposed Fáilte Ireland network. (RCC)	Connect to strategic destinations outside of urban areas as appropriate (including transport hubs and tourist destinations), as appropriate. (Obj)
The length of the network that is off road or of greenway standard should be maximised with the aim of minimising the interaction with motorised vehicles. (TOR)	Encourage use of off-road infrastructure, where appropriate. (Obj)
The network should use existing cycle routes if appropriate. Special attention should be given to the opportunities of using both the disused rail network and canal / river tow-path networks as cycling / walking routes. (TOR) Routes corridors should either utilise or connect to existing road cycling infrastructure. (RCC)	Integrate with existing and proposed cycling infrastructure (including greenways, safe routes to schools, the EuroVelo network, Interreg projects), as appropriate. (Obj) Incorporate existing greenways, disused railways, canals, bypassed national roads, regional and local roads, long distance trails, as appropriate. (Obj)
The route framework should learn from existing successful national cycle networks, such as Britain and Denmark. (TOR)	Take lessons from best practice internationally in development of national cycle networks, particularly the UK and EU high-cycling countries. (Obj)
The cycling network should be integrated with public transport modes. (TOR)	Connect to strategic destinations outside of urban areas as appropriate (including transport hubs and tourist destinations), as appropriate. (Obj)
It should ensure that routes are provided in a manner that will allow cycling to develop as a viable mode for people's transport and commuter needs, as well as ensuring development of recreational / leisure and tourist cycling. (TOR)	Support the development of cycling and walking culture in Ireland. (Obj)
The network will be built to best practice standard, follow routes that maximise the number of potential users and its attractiveness to users. (Vision)	Propose corridors to maximise the number of users. (Obj)
The routes will, where possible, avail of existing routes and State-owned lands. (Vision)	Incorporate existing greenways, disused railways, canals, bypassed national roads, regional and local roads, long distance trails, as appropriate. (Obj) Maximise the use of publicly owned land, where possible. (Obj) Where efficient and effective, encourage routes that use 'quiet', low traffic volume roads. (Obj)



2010 Scoping Study Terms of Reference (TOR), Vision and Route Corridor Criteria (RCC)	NCN Plan Objectives (Obj)
Route corridors should link to ports and major airports. (RCC)	Connect to strategic destinations outside of urban areas as appropriate (including transport hubs and tourist destinations), as appropriate. (Obj)
The proposed network should connect to the National Cycling Network in Northern Ireland. (RCC)	Integrate with existing and proposed cycling infrastructure in Northern Ireland, as appropriate. (Obj)
	Enhance local environments and biodiversity where possible (e.g., pollinator plans, green corridors). (Obj)
	Future-proof cycle route capacity, taking account of population growth and additional demand from modal shift. (Obj)
	Promote the design of cycling infrastructure that is fully accessible to all users, regardless of age or ability. (Obj) Promote the design of cycling infrastructure that meets safety requirements. (Obj) Promote the design of cycling infrastructure that provides a safe and secure environment for all users. (Obj)

## 1.2 Governance Approach for NCN Plan Development

To oversee development of the NCN Plan, a project governance structure was agreed including key stakeholders, as outlined in Figure 1.2.

The Project Board included representatives of TII and Department of Transport (DoT) and was responsible for the final approval of project documents and outputs. The Advisory Group included representatives of TII, DoT, the NTA and County and City Management Association (CCMA) members – representing local authorities. The Advisory Group's role was to challenge the strategic direction of the project and review the various options at decision points during development of the NCN Plan.

The Technical Group included internal TII stakeholders who provided specialist expertise when reviewing project work and provided input and feedback at various stages including project vision statement and objectives, national and international best practice, network development, infrastructure requirement, integration with existing and planned networks, market research and survey questions

The Project Management Team was led by TII and supported by AECOM in day-to-day project delivery.





Figure 1.2: Project Governance Structure

### 1.3 Methodology

The methodology for developing the NCN Plan consisted of a five-stage process, summarised in Figure 1.3 and outlined in further detail in Table 1.2. The approach incorporated multiple elements to provide key inputs, reference points and evidence to inform the development of the final plan, including:

- Close and regular collaboration with stakeholders and a comprehensive public consultation.
- Thorough assessment of existing and planned infrastructure.
- Identification of potential environmental concerns and a full strategic environmental assessment.
- Research on potential future user needs and behaviour.
- International peer review and case studies.
- A robust and tailored approach to network development and assessment.
- As assessment of design standards and infrastructure requirement.
- A monitoring framework.
- Development of an implementation strategy.



Figure 1.3: NCN Pan Development Process



Table 1.2: NCN Plan Methodology

Stage Overview	Key Tasks Undertaken
<p><b>Stage 1 – Strategy Planning</b></p> <p>Mobilisation of the project and agreement of approach through the development of the PEP (Project Execution Plan) and SMP (Stakeholder Management Plan) as well as commencement of critical tasks to delivery, such as the GIS dashboard and market research.</p> <p>The project vision and objectives were developed, and stakeholder engagement commenced.</p>	<ul style="list-style-type: none"> <li>• Preparation of Project Execution Plan</li> <li>• Development of project vision statement</li> <li>• Development of project objectives</li> <li>• Development of Project Logo and Collateral</li> <li>• Preparation of Stakeholder Management Plan</li> <li>• Market Research</li> <li>• Development of NCN GIS Dashboard</li> <li>• Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) Screening</li> <li>• Initial engagement with stakeholders</li> <li>• Stakeholder engagement</li> </ul>
<p><b>Stage 2 – Data Collection and Analysis</b></p> <p>Analyses to inform the identification of the NCN corridors and development of an inventory of the existing and planned infrastructure.</p> <p>Investigation of international case studies and engagement.</p> <p>Market analysis including a nationally representative sample survey to define the criterion for development of the NCN.</p> <p>A detailed review of the network proposed in the 2010 NCN Scoping Report was also undertaken to investigate how it aligns with current objectives and requirements.</p>	<ul style="list-style-type: none"> <li>• Inventory of the existing and planned cycle network</li> <li>• Benchmarking of international case studies</li> <li>• Identification of key destinations and attractions</li> <li>• NCN Market Analysis</li> <li>• Stakeholder engagement</li> <li>• Review of 2010 NCN Scoping Study recommendations</li> <li>• Development of assessment framework</li> </ul>
<p><b>Stage 3 – Plan Development and Appraisal</b></p> <p>Entailed the identification and refinement of the proposed NCN corridors.</p> <p>The NCN Plan defines a set of corridors connecting Primary and Secondary nodes which combined make up the network. Stakeholders were engaged at key points to review work and provide feedback as the network was developed and assessed.</p>	<ul style="list-style-type: none"> <li>• Policy and sustainability review</li> <li>• Identification of NCN Corridors</li> <li>• Stakeholder Engagement</li> <li>• Design case studies</li> <li>• Identification of implementation requirements</li> <li>• Strategic Environmental Assessment (SEA)</li> <li>• Appropriate Assessment (AA)</li> </ul>
<p><b>Stage 4 – Public Consultation</b></p> <p>Public consultation was completed via an online website with widespread publicity and stakeholder engagement.</p> <p>The consultation period was open from 6<sup>th</sup> of May until the 7<sup>th</sup> of June 2022 after which an analysis of the feedback was undertaken.</p> <p>Feedback from both the public and stakeholders was then used to determine any amendments to the proposed plan.</p>	<ul style="list-style-type: none"> <li>• Public consultation</li> <li>• Stakeholder workshops</li> <li>• Definition of monitoring framework</li> <li>• Summary of feedback</li> </ul>
<p><b>Stage 5 – Finalisation</b></p> <p>The draft NCN proposals were finalised based on the feedback received and an agreed approach to implementation and monitoring.</p>	<ul style="list-style-type: none"> <li>• Preparation of Final NCN Plan</li> </ul>



## 1.4 Stakeholder and Public Engagement

Proactive and early engagement with stakeholders is a vital aspect of strategic transport planning and has a significant influence on the success of project delivery. The approach taken to stakeholder management in developing the NCN Plan was based on the five steps illustrated in Figure 1.4.

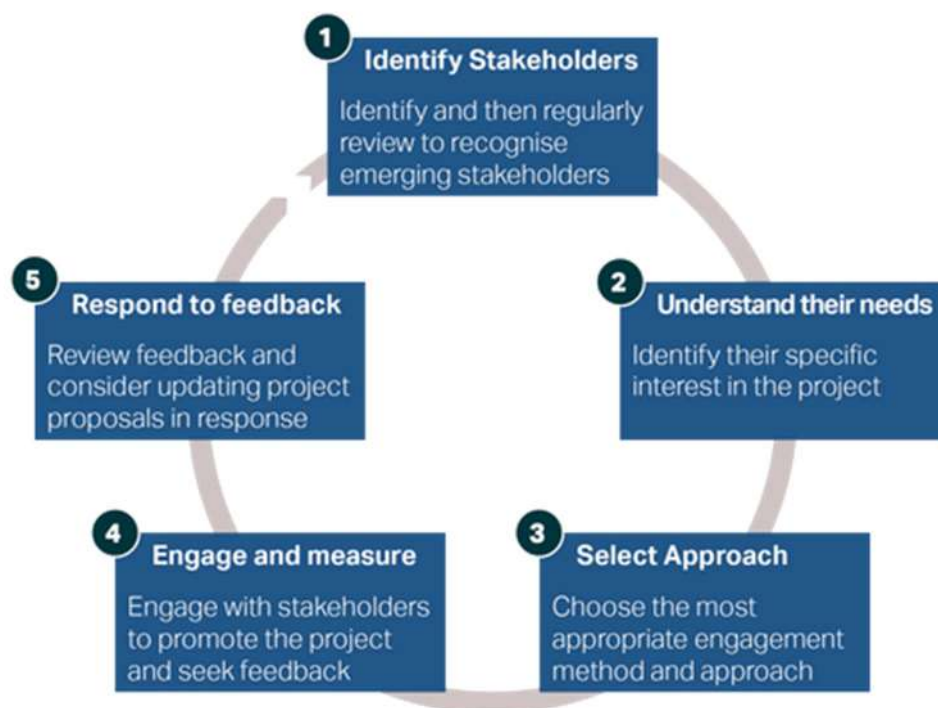


Figure 1.4: Approach to Stakeholder Engagement

### Stakeholder Mapping

Stakeholder mapping incorporates steps one and two above. Following the identification of appropriate stakeholders, their respective needs were catalogued within a stakeholder register. Stakeholders were categorised as shown in Table 1.3 to reflect the different levels of engagement, as follows:

- **Delivery partners** – These stakeholders will be instrumental in the development of the NCN through direct approval, funding, oversight and/or implementation. These stakeholders are included in the project governance structure and were engaged in monthly meetings.

*Note: The Department of Transport was represented in both the Project Board and the Advisory Group. Due to its role in funding the NCN and developing various active travel policies, it was both the Project Approver and a Delivery Partner.*

- **Engaged parties** – These stakeholders had a specific role or interest in the development of cycling infrastructure and were critically important in developing the plan. Engagement commenced during the data collection phase of the project through stakeholder workshops and continued throughout the project. Engagement with this group initially focused on sharing approaches to project delivery and project objectives, as well as receiving data and information regarding existing and planned cycle and other relevant infrastructure from stakeholders. A series of workshops were also held during the network development phase of the project to solicit input and feedback at key stages (see Section 4, Network Development for further information regarding these workshops).
- **Interested parties** – These stakeholders were identified as having an interest in the outcome of the NCN Plan and cycle infrastructure in Ireland more broadly. Engagement was primarily done during Stage 4 Public Consultation, via written notifications and submissions.



- **General public** – This group includes all other audiences who may be users of the infrastructure or have an interest in how the NCN will be delivered. Engagement with the public was focused on Stage 4 Public Consultation.

Table 1.3: Stakeholder Classification

Type	Organisation	
Delivery Partners	Dept. of Transport	County and City Management Association (CCMA)
	National Transport Authority (NTA)	
Engaged Parties	Fáilte Ireland	Cycle user groups (via cyclist.ie)
	Waterways Ireland	Cycling Ireland
	Irish Rail	Cara Sport Inclusion Ireland
	Sport Ireland	
Interested Parties	Coillte	An Taisce
	Office of Public Works (OPW)	Road Safety Authority (RSA)
	Dept. of Education	Chambers of Commerce
	Environmental Protection Agency (EPA)	Greenways Ireland
	Disability Federation of Ireland	Eurovelo
	Bus Éireann	Health Service Executive (HSE)

## Stakeholder Engagement

Stakeholder engagement incorporates steps three and four outlined in Figure 1.4. Different approaches to engagement were used with different groups and at different stages, as follows:

- Project governance – All three Delivery Partners (DoT, NTA and CCMA) were represented on the NCN Advisory Group and were actively involved in project reviews via regular, scheduled meetings.
- 1-to-1 virtual meetings – Included both regularly scheduled meetings with key Delivery Partners and ad hoc meetings to discuss project details as needed. They also provided project updates and solicited input and feedback with Engaged Parties.
- Website – Used for public consultation to communicate project objectives, approach and proposed network, as well as other general information regarding the Plan.
- Presentations – Used to promote the NCN website during public consultation.
- Written submissions / Structured questionnaire – Used to engage Interested Parties and the general public and to solicit input and gather feedback during the public consultation.

A summary of the outcome of the stakeholder engagement activities undertaken over the course of the project is provided below:

- **Stage 1:** Planning involved initial engagement with stakeholders and programme commencement. This clarified the objectives of the project amongst stakeholders and helped establish the mechanisms for further engagement throughout the development of the Plan. This stage also defined the inputs required from the various stakeholders and when this information will be required.
- **Stage 2:** Data Collection focused on collating information to help develop further the inventory of the existing and planned infrastructure. This engagement was used to develop a comprehensive understanding of the issues and opportunities as they relate to existing and future cycling infrastructure in Ireland and gain feedback on the selected nodes that the NCN aims to connect.
- **Stage 3:** Options Development and Assessment focused on gaining feedback on the Plan's development of the proposed NCN corridors. Stakeholders provided input to the emerging network



at key stages of development in advance of the public consultation: Defining destinations and developing corridors.

- **Stage 4:** Public Consultation was facilitated through an online platform with widespread publicising of the draft Plan and consultation period through the Department of Transport's media channels. The consultation period was open for a period of five weeks after which analysis of the feedback was undertaken.

## Public Consultation

A comprehensive public consultation for the NCN Plan was developed to give members of the public and other interested parties an opportunity to provide feedback on the proposed network.

The consultation was conducted online through an interactive website which included detailed information on the plan objectives, methodology and proposed network. It also included an online survey with the opportunity to provide open feedback / comments.

The consultation period lasted for over one month, from May 4<sup>th</sup> until Jun 7<sup>th</sup>, 2022 (inclusive). During that period 21,000 views of the website were registered from over 9,000 unique visitors.

TII and the DoT issued a press release through their websites inviting participation in the consultation and also promoted the public consultation via a social media campaign throughout the public consultation period. Newspapers and online media sites published numerous articles regarding the launch of the public consultation. Other stakeholders also promoted the public consultation – in particular, Cyclist.ie notified its members. All actions assisted in increasing awareness of the website and public consultation.

The public consultation website presented the proposed NCN via an interactive map and also detailed the NCN vision statement and project objectives, as well as various other elements of the project. It included a feedback survey that consisted of eight questions regarding cycling behaviour, infrastructure preferences, alignment of the proposed NCN with project objectives, potential use of the NCN, as well as general feedback on the proposed Plan and the associated SEA Environmental Report (available in Appendix G).

The number of online submissions received was over 1,350. The conversion rate of approximately 15% (percentage of unique visitors who left a submission) was relatively high (industry average is approximately 7%) and reflects a reasonable level of engagement by visitors to the website regarding the proposed NCN Plan.

Written submissions were also received (both by post and email) from 38 different entities ranging from individuals and private companies to interest groups and defined stakeholders.

## 1.5 Environmental Assessment

Environmental matters are integral to development and delivery of the NCN Plan. In addition to incorporating environmental matters and biodiversity in the network objectives and development, both a Strategic Environmental Assessment (SEA) and an Appropriate Assessment (AA) of the plan were undertaken.

The SEA is a process for the formal, systematic evaluation of the likely significant environmental effects of implementing a plan or programme, before a decision is made to adopt the plan or programme. The assessment provides for a high level of protection of the environment and contributes to the integration of environmental considerations into the preparation and adoption of plans. To determine whether a full SEA is required, an SEA Screening Report is prepared at the early stages of development of plans or programmes.

An AA is an assessment of the potential adverse effects of a plan or project (in combination with other plans or projects) on the Natura 2000 network of European sites, i.e. Special Areas of Conservation



(SACs) and Special Protection Areas (SPAs). To test whether AA is required for a particular plan or project, an AA screening is first undertaken. Its purpose is to determine, on the basis of a preliminary assessment and objective criteria, 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. Where significant effects are likely, uncertain or unknown at this screening stage, a Natura Impact Statement (NIS) is prepared.

Both assessments were prepared and submitted to the relevant authorities for review as part of a public consultation process and the proposed NCN was updated based on the feedback received. The various Environmental Reports are provided in the following appendices:

- Appendix F: SEA Screening Report.
- Appendix G: SEA Environmental Report.
- Appendix H: SEA Adoption Statement.
- Appendix I: Natura Impact Statement.

# Background Research





## 2 Background Research

The development of the NCN Plan was underpinned by a comprehensive data collection exercise. This section summarises the data collection, background research and analysis undertaken to inform development of the NCN Plan including:

- A review of cycling trends in Ireland.
- A policy review.
- A literature review.
- An inventory of the existing network.
- An assessment of international best practice in the planning and implementation of National Cycle Networks.
- A market research exercise.

### 2.1 Cycling Trends in Ireland

The literature review also revealed key insights about recent cycling trends in Ireland, as summarised below.

- The volume of people walking and cycling in Ireland has increased dramatically in recent years due to a combination of improved infrastructure (43km of new protected cycle routes added between 2019-2021 in Dublin alone), peoples increased awareness of the health and environmental benefits and as a result of the uptake in these modes following the 'enforced' introduction to new users during COVID-19.
- Between 2019 and 2021 the number of annual cycling trips in Dublin increased from 86.6 million to 90.2 million (4%). Combined with walking trips this takes 330,000 cars off the road every day in the Dublin Metropolitan Area across Dublin, according to the 2021 Walking and Cycling Index <sup>2</sup>
- 64% of adult residents walk 5 or more days a week and 25% of adults cycle at least once a week.<sup>3</sup>
- Approximately 3% of commuters cycled to work in 2016<sup>3</sup>, although cycling to work has become more popular increasing by 43% from 2011 to 2016.
- 57,000 people commuted via a cycle in Ireland in 2016, with a further 10,700 cycling to third level institutions. There is likely potential for increased levels of cycle commuting as nearly 75% of people surveyed as part of one of the research papers above said they would consider cycling to a new job if 'off road' cycle spaces were available (Caulfield, Brick et. al, 2012). Recent surveys suggest that 71% of residents support building cycle tracks physically separated from traffic and pedestrians even where that means less room for other traffic<sup>3</sup>
- The distance travelled to work also influences a person's ability or willingness to switch to a cycle commute. In 2016, the average commute was 15km, an increase of 0.3km from 2011. Between 2011 and 2016, there was a rise of 10% of people that commuted 25km or more to work.
- Although only 3% of people in Ireland use cycling as their main form of transport (less than the EU average of 14%), 10% cycle regularly (Sport Ireland, 2019). This figure includes recreational cyclists who generally cycle longer distances than commuters.
- The Walking and Cycling Index 2021 survey found that 65% of people would find traffic-free routes away from roads useful to help them cycle more, 63% would find cycle tracks, physically separated from traffic and pedestrians useful to help them cycle more, 64% would like more signposted local cycle routes along quieter streets and 57% want better links with public transport<sup>3</sup>. 71% of

<sup>2</sup> <https://www.nationaltransport.ie/planning-and-investment/transport-investment/active-travel-investment-programme/walking-and-cycling-index-2021/>

<sup>3</sup> CSO Census data, 2016





residents supported building more physically separated on-road cycle tracks, even when this would mean less space for other road traffic.

- In the same survey, people were asked that type of support would encourage them to cycle more: 59% cited improved access to shared cycle schemes, 28% cited improved access to a cargo bike, 36% mentioned improved access to electric bikes and 53% cited better access to bicycles<sup>3</sup>. These all point towards the need to provide continued support to residents for the purchase of bicycles but also the need to enhance our shared micromobility networks.

## 2.2 Policy Review

A detailed policy and literature review was undertaken and outlined in Appendix A. A brief summary is provided hereunder. The table below provides a summary of the international, national, regional, and local policies which were reviewed to provide some context for development of the NCN Plan.

**Table 2.1: Overview of Policies Reviewed for Alignment with NCN Plan**

Policy Level	Policy Document
<b>International Policy</b>	<ul style="list-style-type: none"> <li>• 2030 Agenda for Sustainable Development</li> </ul>
<b>European Policy</b>	<ul style="list-style-type: none"> <li>• EU Sustainable and Smart Mobility Strategy (2021)</li> </ul>
<b>National Policy</b>	<ul style="list-style-type: none"> <li>• Climate Action Plan 2023</li> <li>• Project Ireland National Planning Framework 2040</li> <li>• National Development Plan 2021-2030</li> <li>• Programme for Government: Our Shared Future</li> <li>• National Sustainable Mobility Policy (2022)</li> <li>• National Investment Framework for Transport in Ireland (NIFTI) (2021)</li> <li>• Outdoor Recreational Plan for Public Lands and Waters in Ireland 2017-2021</li> <li>• Ireland's Government Road Safety Strategy 2021-2030</li> <li>• Ireland's 4th National Biodiversity Action Plan (2022)</li> </ul>
<b>Regional &amp; Local Policy</b>	<ul style="list-style-type: none"> <li>• Regional Spatial and Economic Strategies</li> <li>• Ireland's Cycle Network (NTA, 2022)</li> <li>• Greater Dublin Area Draft Cycle Network Plan (2021)</li> <li>• Regional City Transport Strategies</li> <li>• Area-Based Transport Assessments (ABTAs)</li> <li>• County Development Plans and Local Area Plans</li> <li>• Five Cities Demand Management Study</li> </ul>

A common theme emerging from the review of international and national policy is the need to provide high-quality linkages for non-car modes between settlements. This is particularly important in addressing sustainability and climate action objectives as well as beneficial in terms of health, wellbeing and gender equality.

European policy includes targets to reduce transport-related greenhouse gas emissions, which is reflected nationally in the targets outlined in the Climate Action Plan to halve Ireland's emissions by 2030 and reach net zero no later than 2050. This is underpinned by a target of increasing daily active travel journeys by 50% by 2030. More recently, sectoral emissions ceilings have been set which require a 50% reduction in transport emissions by 2030 and this further highlights the need to encourage alternative transport modes other than the private car.

As such, support and investment in sustainable mobility is a common action / policy in a number of national policy documents, including the National Planning Framework, National Development Plan and



Sustainable Mobility Policy, the latter of which specifically notes that *"a strategic national cycle network will be identified, providing key inter-urban links and enabling the continued development and delivery of that network"*.

The importance of cycling in realising sustainable mobility targets/goals is reflected in many policy documents, including the Programme for Government (2020), Regional Spatial and Economic Strategies and Greater Dublin Area (and other regional cities) Transport Strategies. It is also reflected in the National Investment Framework for Transport Infrastructure (NIFTI) (2021), which places active travel at the top of its modal hierarchy. The objectives of the NCN Plan support and align with European, national, regional and local objectives.

Broadly speaking, recent policy documents at all levels have focused on the importance of sustainable transport in transitioning to a low-carbon economy. The core element of this is modal shift away from the private car. This is dependent, not only on improved public transport services, but also on an increase in the use of active modes. Numerous initiatives and objectives around the development of new and improved cycle facilities are present at all policy levels. The development of the NCN will support the achievement of these policy objectives and initiatives.

## 2.3 Literature Review

An academic literature review included a range of research papers, articles, data sets. A summary of the publications included in the academic review is provided in Table 2.2.

Table 2.2: Overview of Articles Reviewed for Market Research

Title	Author(s)	Year of Publication
<b>A Strategy for the Development of Irish Cycling Tourism: Conclusions Report</b>	Sustrans	2007
<b>Bike Life Dublin Metropolitan Area</b>	NTA	2019
<b>Commuting in Ireland</b>	Central Statistics Office	2016
<b>Determining Bicycle Infrastructure Preferences - A Case Study of Dublin</b>	Brick, Caulfield, et al.	2012
<b>Four Types of Cyclists?: Testing a Typology to Better Understanding of Bicycling Behaviour and Potential</b>	Dill et al.	2012
<b>Greenways and Cycle Routes Ancillary Infrastructure</b>	Department of Transport, Tourism and Sport	2018
<b>How Far is too Far to Cycle to Work (Article)</b>	Bicycle 2 Work (bicycle2work.com)	Not Specified
<b>Irish Sports Monitor: Annual Report</b>	Sport Ireland	2019
<b>Travelling in a Woman's Shoes - Understanding Women's Travel Needs in Ireland to inform the Future of Sustainable Transport Policy and Design</b>	Transport Infrastructure Ireland (TII)	2020

The review highlighted a number of areas relevant to the development and implementation of the NCN Plan:

- **Trip Lengths for Commuters** - Commuting by cycle is increasing in popularity but is heavily dependent on where one lives. In 2016, the average commute was 15km, Urban areas (in particular Dublin) with a shorter distance to work have higher rates of commuting by cycle. Although most NCN corridors are inter-urban and mostly cover longer distances, it is likely they will still cater for commuter trips. These trips may not necessarily be from urban centre to urban centre but from



areas outside the continuous built up area into the urban centre. As such, it is important that the NCN has good connectivity to local and urban cycle networks to facilitate these journeys. This was a key element of the development of the NCN Plan.

- **Cycle Facilities and Confidence** - Segregated and / or traffic free cycle infrastructure increases levels of comfort and safety and encourage more trips to be taken by cycle across all cycling confidence levels. This was a key factor in determining the NCN Design Principles (Section 6.3) and the types of infrastructure that are suitable for inclusion in the NCN.
- **Gender Influence** - A large gender disparity exists in cycle participation in Ireland, with men generally twice as likely to cycle. Safety is seen by women as a significant barrier to cycling, and the provision of safe cycle infrastructure is seen as a key factor to overcoming this. Again, this influenced the types of infrastructure considered for inclusion in the NCN.
- **Recreational Cycling** - Recreational cycling is more popular in Ireland than commuting by cycle and has distinct infrastructure preferences compared to commuting (i.e., scenic routes and recreational infrastructure versus directness of route). this was taken into consideration when developing and assessing corridor options.

## 2.4 Existing Cycle Network Inventory

The NCN Plan will incorporate, or connect into as appropriate, existing and planned cycling infrastructure. As such, the starting point for the development of the plan was to collate information about this infrastructure across Ireland, so that the NCN could be specified to utilise as much of it as possible.

Consultation was undertaken with key stakeholders to identify and collate data on existing and planned cycle infrastructure. This information was integrated within an online GIS dashboard to inform the development of proposals and corridor alignments. Focusing primarily on inter-urban and rural segregated cycle ways, this GIS-based platform was used to identify connections to key destinations and attractions.

## 2.5 Assessment of International Best Practice

The project team undertook a review of cycle network planning at a national level in three countries, as follows: Denmark, the United Kingdom and Hungary. The reviews are provided in detail in Appendix B with some of the key insights summarised below. This review was critical to development of the NCN Plan.

### Denmark

Denmark has multiple types of cycle networks that were developed separately, with different purposes in mind, but which combine to create a comprehensive overall network. Two in particular are of interest to the NCN. National Cycle Routes are long routes (each over 200km) crossing the country north-south and east-west and primarily aimed at tourist and recreational cyclists. The Super Cycle Highways (Super Cykelstier), on the other hand, are primarily aimed at shorter trips and, in particular, commuters across the wider Copenhagen Region. The success of the Danish cycle networks is reflected in the fact that cycling accounts for 26% of trips under 5km and 16% of all trips throughout Denmark<sup>4</sup>.

Key takeaways from a review of the planning of both networks were incorporated into the development of the NCN Plan, including:

- **Complementary Networks** – the examples from Denmark show how two separate cycle networks, the National Cycle Routes and the Super Cycle Highways, can combine to create a comprehensive network that caters for a variety of different trip lengths purposes, and integrate with wider networks, including quiet, rural etc.

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<sup>4</sup> (Cycling Embassy of Denmark, 2018)



*In a similar way, although the NCN has been developed to cater predominantly for longer-distance inter-urban travel, it will integrate with urban networks. As such, cooperation with the NTA's CycleConnects team was an ongoing feature of the Plans development, to ensure that both networks complemented each other.*

- **Stakeholder Cooperation** – several organisations contribute to the planning and delivery of the Danish cycle networks, including the Danish Cyclists' Federation, Cycling Embassy of Denmark, Danish Cycling Tourism, and the Municipal Cycling Council.

*Similarly, the development of the NCN Plan has included regular engagement with a range of stakeholders (outlined previously in Section 1.4). Close engagement with a range of stakeholders will be a key element in the delivery of the network.*

- **Use of and Integration with Existing Cycle Infrastructure** - Many parts of the Super Cycle Highway network were based on existing infrastructure which was upgraded. The first step was identifying what infrastructure was already in place, followed by identifying the gaps in infrastructure.

*This approach was incorporated into the NCN Plan development, in particular through the inclusion of Objective 5.2 (as outlined in Section 3.2). Similar to the Danish example, a comprehensive inventory of existing cycling facilities in Ireland was also undertaken at the outset of the project (further detail is provided in Section 2.5).*

- **Integration with Transport Hubs** - Many of the Cycle Superhighways were built in coordination with the S-Train Network to give easy access to its stations. This allows users to cycle out and take the train home or cycle to another station if they don't want to change trains.

*The proposed NCN incorporates rail transport hubs as secondary nodes (as outlined in Section 4). Connectivity with public transport was also a key consideration of the corridor options identification and assessment process.*

## UK

The UK's National Cycle Network (UK NCN) was established to encourage cycling and walking throughout the UK. Sustrans is the custodian of the network and has aided the project since 1979. Many routes on the UK NCN were built prior to the introduction of the first set of UK cycling guidelines in 1996.

In the mid-90's, a renewed impetus and significant funding saw a push to vastly expand the network and by 2018 it was nearly 27,000km in length.

Key takeaways from a review of the planning and implementation of the UK NCN were incorporated into the development of the NCN Plan, including:

- **Safety and Accessibility** - In 2018 Sustrans completed a detailed review of the entire network (Paths for Everyone). This review concluded that vast sections of the network were of 'poor' or 'very poor' standard. Following this, two strategic priorities were identified. Strategic Priority 1 aims to make the NCN safer for everyone by making more of the NCN traffic-free. Strategic Priority 2 aims to make the NCN accessible for everyone.

*These lessons learned show the importance of safety and universal design, concepts which have been incorporated into both the vision and objectives of the NCN Plan (outlined in Section 3).*

- **Prioritise Quality over Quantity** – Although the UK NCN expanded significantly from the mid-90s, the 2018 Sustrans review highlighted that significant proportions of the network were of 'poor' or 'very poor' quality. This was attributed to a 'rush for miles' that occurred as a result of a fresh impetus around network development and funding. This led to Sustrans removing the NCN classification from significant proportions of the network due to them not reaching the new standards set by the 2018 review.

*The development of the NCN Plan has therefore placed an emphasis on providing high quality infrastructure, with standards for the type of infrastructure considered appropriate investigated and determined, as summarised in Section 7.3.*



- **Integration with Local Networks** - Although the UK NCN spans the entire length of the country, there is a lack of integration with local networks. For example, the 'Bee Network' (Greater Manchester's cycle network) has no connections with the greater NCN.

*As outlined previously, the NCN has been developed to integrate with urban networks, to ensure connectivity from urban centre to urban centre, as well as route continuity.*

## Hungary

Hungary's cycle infrastructure was previously developed on an ad hoc basis with isolated developments across the country. The recently developed Cycle Route Network (CRN) plan aims to provide a more coherent network across four specific route types: European, National, Regional and Local. Although the specific route types differ, the goal of producing a coherent network from dispersed ad hoc facilities mirrors that of the NCN Plan. Key takeaways from a review of the planning and implementation (to date) of the CRN were incorporated into the development of the NCN Plan, including:

- **Corridor Development** – the element of Hungary's CRN of most relevance to the Irish NCN is the national core network. This network is identified at a corridor level – corridors are 25km wide bands within which the final route must adhere.

*A similar approach has been taken to the development of the NCN, although the corridors used for the NCN are not nearly as wide with final route subject to design and environmental assessment.*

- **Monitoring** - The CRN is constantly being upgraded and improved. Fifty-one automatic counters are set up in Hungary in the countryside alone with more being implemented in urban areas. Manual counting is also conducted annually at 100-150 points throughout the country. The counters help indicate trends and aid in route selection for urban planners.

*The establishment of a framework for ongoing monitoring, evaluation and learning has been identified as essential to measuring the success of the NCN, and to identify areas that may require improvement.*

## 2.6 Market Research

A nationally representative survey was undertaken to gain a better understanding of cycling behaviour and attitudes in Ireland and define the potential user base for the NCN. An online survey was compiled and completed by a nationally representative sample of 1,000 adults (as part of a large omnibus survey) as well as 67 members of Cyclist.ie. The survey comprised questions regarding cycling behaviour, infrastructure preferences, route preferences and other cycle related topics were included. The full survey results are provided in Appendix D. Key points, which influenced the development of the NCN Plan are outlined below, these reinforced the findings from other areas of background research:

- **Lack of Confidence is a Barrier to Cycling Uptake** - There is a discrepancy between the number of respondents who want to cycle regularly and the number that actually cycle. Results of the surveys showed that the more confident cyclists are more likely cycle which is in keeping with the findings from other research undertaken. This finding has influenced the type of cycling infrastructure considered for the NCN.
- **Infrastructure Preferences** – Safety is the main factor influencing a persons' decision to make a trip by cycle and people almost universally feel safer on segregated infrastructure. Survey results showed that some cyclists will take a longer route for their journey if it uses safer infrastructure. This theme was consistent throughout the research undertaken and influenced corridor selection and infrastructure types considered.
- **Recreational Cycling** – Survey results reinforced the findings from the academic literature review that more people cycle for recreational purposes than commuting purposes in Ireland and that recreational cyclists tend to make longer distance trips (>10km) than commuters. Again, this was considered when developing route corridors, with opportunities to connect to local leisure and recreation facilities investigated.

# NCN Plan - Vision and Objectives





### 3 NCN Plan - Vision and Objectives

#### 3.1 NCN Plan Vision

Developing a coherent and connected NCN has the potential to improve people's health and reduce the negative environmental impacts associated with private car use. By encouraging more people to choose active travel options, such as walking, cycling, and wheeling, it can help to reduce greenhouse gas emissions, air pollution, and traffic congestion. These benefits can result in a cleaner, healthier, and more sustainable environment for everyone. Therefore, the need for the development of a coherent and connected NCN Plan is identified as a way to promote active travel and improve the environment.

The vision of the NCN Plan is to:

***"Develop a safe, connected, and inviting cycle network between urban areas and key destinations to achieve accessible, sustainable, and high-quality routes that will help to reduce the carbon impact of transport and promote a healthy and inclusive society."***

The NCN will link cities and towns of over 5,000 people with a safe, connected and inviting cycle network. The plan will also see the creation of cycle routes to destinations such as transport hubs, centres of education, centres of employment, leisure, and tourist destinations. Where possible, it will optimise the potential for people to cycle as part of their daily activities, such as work or educational commuting. It will also integrate with existing and proposed cycle infrastructure. Both road safety, and the safety and security of users, will be central to the development of the NCN.

The NCN Plan builds on previous work completed by TII and aligns with the CycleConnects work being undertaken by the NTA in developing urban and county level cycle networks. It integrates with other cycle routes and networks in various stages of development, including the EuroVelo routes, national and regional greenways, and the Strategic Plan for Greenways in Northern Ireland. The NCN Plan complements these projects and establishes a core spine of infrastructure to encourage further development of cycling projects in the future.

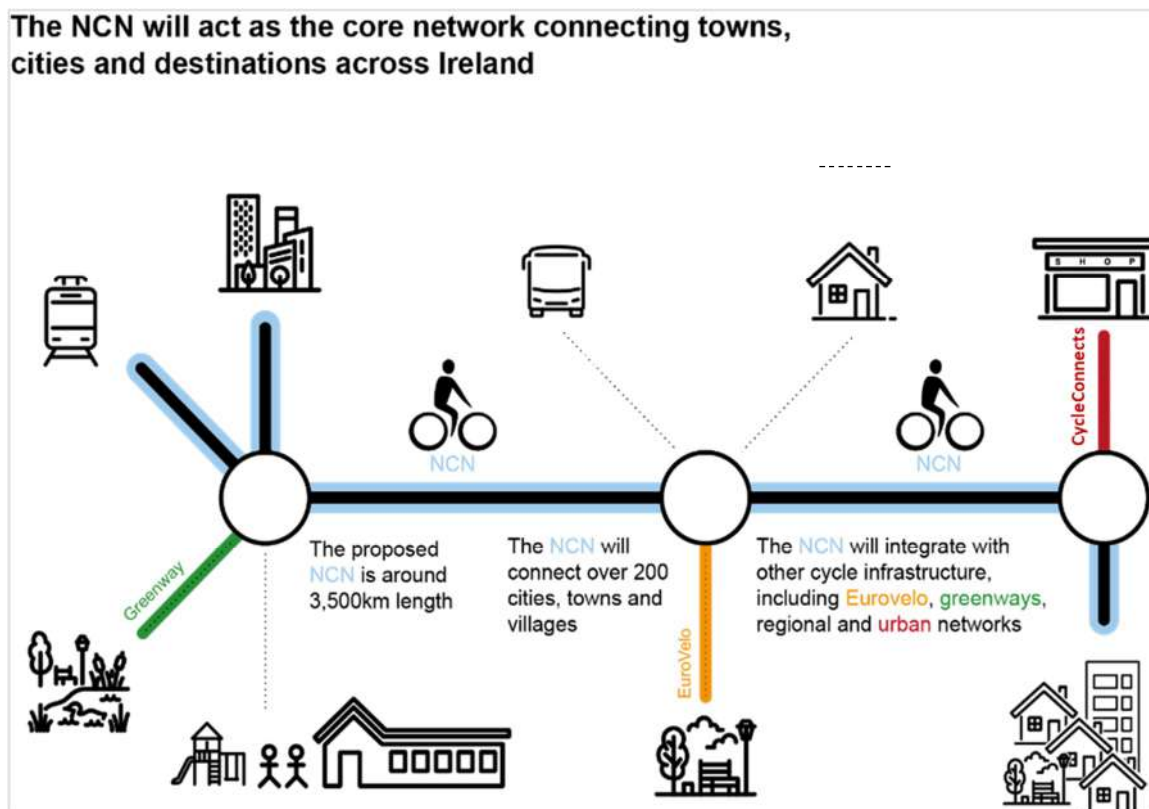


Figure 3.1: NCN as Core Cycle Network



The NCN will help to facilitate Action 232 of CAP 2021, which specifically calls for the development of a coherent and connected NCN Plan, as well as Action TR23/30 of CAP 2023, which calls for the advance roll-out of national cycle networks.

## 3.2 NCN Plan Objectives

The NCN Plan has been developed in the context of a set of project objectives agreed by TII and key stakeholders including the DoT, NTA and CCMA.

The NCN Plan objectives, outlined in Table 3.1, are consistent with national and regional policy objectives.

**Table 3.1: NCN Plan Objectives**

National policy	Policy Goal	NCN Plan Objective	
<b>Combat climate change &amp; improve air quality</b> (NPF, CAP, NIFTI, & RSES).	1. Reduce emissions from transportation by supporting a modal shift from private vehicles to cycling and walking.	1.1	Increase the number of cycle trips by improving the provision of safe and attractive cycle infrastructure.
		1.2	Enhance and protect local environments and biodiversity (e.g., pollinator plans, green corridors).
<b>Healthy living</b> (NPF & SRTS).	2. Encourage active travel for daily activities and recreation.	2.1	Connect to strategic destinations outside of urban areas as appropriate (including centres of education, centres of employment, and leisure destinations).
		2.2	Support the development of cycling and walking culture in Ireland.
<b>Regional accessibility and economic development</b> (NPF & RSES).	3. Support connectivity and economic growth of regional urban areas of 5,000+ population as well as priority tourist destinations.	3.1	Connect identified urban areas of 5,000+ population and those urban areas listed in the NTA's urban cycle network strategy.
		3.2	Connect to strategic destinations outside of urban areas as appropriate (including transport hubs and tourist destinations), as appropriate.
		3.3	Integrate with existing and proposed cycle infrastructure (including greenways, safe routes to schools, the EuroVelo network, Interreg projects), as appropriate.
		3.4	Integrate with existing and proposed cycle infrastructure in Northern Ireland, as appropriate.
<b>Safety &amp; accessibility</b> (RSS & NPF & SRTS).	4. Propose safe and accessible infrastructure that encourages modal shift and limits interactions with other vehicles.	4.1	Encourage use of off-road infrastructure, where appropriate.
		4.2	Where efficient and effective, encourage routes that use 'quiet', low traffic volume roads.
		4.3	Promote the design of cycle infrastructure that is fully accessible to all users, regardless of age or ability.





National policy	Policy Goal	NCN Plan Objective	
		4.4	Promote the design of cycle infrastructure that meets safety requirements.
		4.5	Promote the design of cycle infrastructure that provides a safe and secure environment for all users.
<b>Prudent use of public funds</b> (PSC).	5. Ensure appropriate balance between value for money and quality of outcome, in terms of potential impact on mode shift.	5.1	Propose corridors to maximise the number of users.
		5.2	Incorporate existing greenways, disused railways, canals, bypassed national roads, regional and local roads, long distance trails, as appropriate.
		5.3	Maximise the use of publicly owned land, where possible.
		5.4	Provide a framework to support the targeted investment in associated active travel projects.
		5.5	Take lessons from best practice internationally in development of national cycle networks, particularly the UK and EU high-cycling countries.
		5.6	Future-proof cycle route capacity, taking account of population growth and additional demand from modal shift.

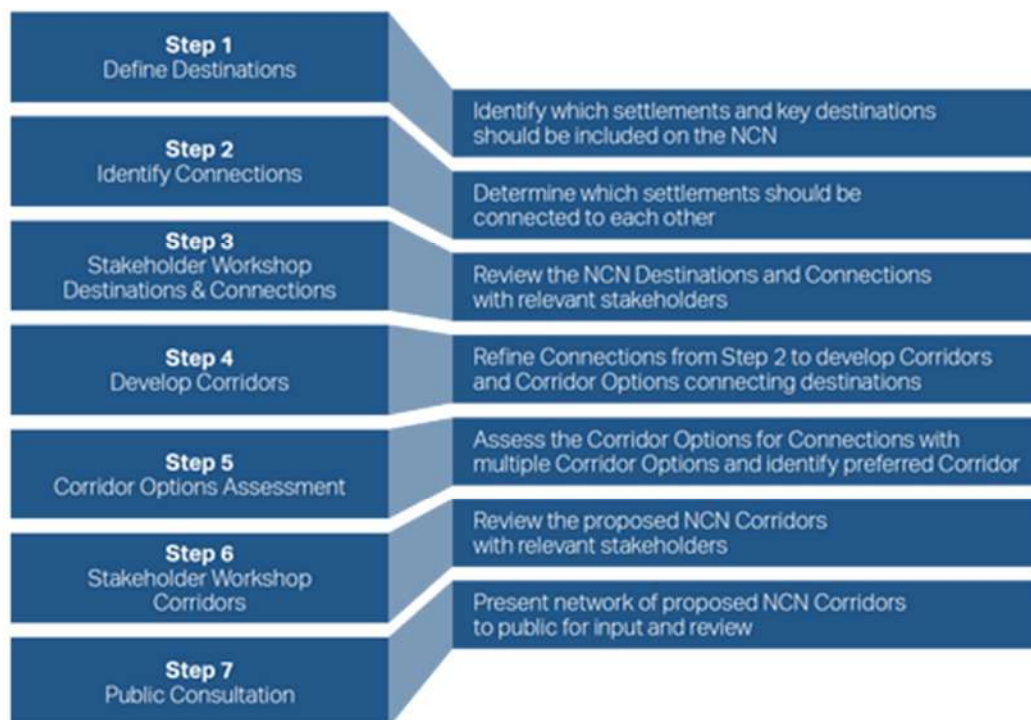
# Network Development





## 4 Network Development

Development of the NCN corridors was based on an iterative process, summarised in Figure 4.1 and outlined in detail in this section.



**Figure 4.1: Summary of Network Development Process**

Key assumptions that were central to defining the network were as follows:

- Nodes are the towns, settlements or other key destinations which represent a start, end or layover point on the NCN. Three types of nodes were defined, as follows:
  - Primary node – Consisting of cities and / or large towns with a population of over 20,000 people (towns with over 10,000 were also considered in areas which were more sparsely populated). These represent an NCN start or end point.
  - Secondary node – Consisting of medium sized towns with a population of between 10,000 and 20,000 people (plus a selection of smaller towns in sparsely populated areas with populations of between 5,000 and 10,000). Major tourist attractions located outside urban areas were also included, and / or Major transport hubs. These represent an NCN start or end point.
  - Other nodes – Consisting of small towns and settlements, strategic destinations (e.g. transport hubs, centres of education, centres of employment, leisure destinations, and tourist destinations).

Some exceptions to these classifications were made in areas that are remote and do not have the population threshold, to ensure an even and national spread of coverage.

- Connections were defined as initial 'straight line' links between nodes. Following more detailed assessment of the opportunities presented by each link, a corridor between nodes was defined. Corridors are proposed only at an indicative level and provide a broad alignment within which there may be several potential routes. An options assessment exercise will be required to test the



potential routes within a corridor against a series of criteria to define the preferred route. This options assessment exercise does not form part of the current project and will be undertaken as part of the roll out of the NCN.

An overview of each step in defining the NCN is presented in the following sections.

## Step 1 – Define Destinations

Using the criteria outlined above, the key destinations for the NCN were identified, as outlined in Table 4.1 and Table 4.2.

**Table 4.1: Primary NCN Nodes**

Primary NCN Nodes	Basis for inclusion
Armagh	NI connection point close to border (may depend on NI greenway strategy)
Athlone	>20,000 population
Balbriggan	>20,000 population
Ballina	>10,000 but less than 20,000 population but largest town in a sparsely populated region
Bray	>20,000 population
Carlow	>20,000 population
Castlebar	>10,000 but less than 20,000 population but largest town in a sparsely populated region
Cavan	>10,000 but less than 20,000 population but largest town in a sparsely populated region
Celbridge	>20,000 population
Cork	>20,000 population
Derry	NI connection point close to border (may depend on NI greenway strategy)
Drogheda	>20,000 population
Dublin	>20,000 population
Dundalk	>20,000 population
Ennis	>20,000 population
Enniskillen	NI connection point close to border (may depend on NI greenway strategy)
Galway	>20,000 population
Kilkenny	>20,000 population

Primary NCN Nodes	Basis for inclusion
Letterkenny	>10,000 but less than 20,000 population but largest town in a sparsely populated region
Limerick	>20,000 population
Longford	>10,000 but less than 20,000 population but largest town in a sparsely populated region
Mullingar	>20,000 population
Naas	>20,000 population
Navan	>20,000 population
Newbridge	>20,000 population
Newry	NI connection point close to border (may depend on NI greenway strategy)
Omagh	NI connection point close to border (may depend on NI greenway strategy)
Portlaoise	>20,000 population
Sligo	>10,000 but less than 20,000 population but largest town in a sparsely populated region
Strabane	NI connection point close to border (may depend on NI greenway strategy)
Swords	>20,000 population
Tralee	>20,000 population
Waterford	>20,000 population
Wexford	>20,000 population
Wicklow	>10,000 but less than 20,000 population but largest town in a sparsely populated region



Table 4.2: Secondary NCN Nodes

Secondary Nodes	Basis for inclusion
Arklow	>10,000 population
Ashbourne	>10,000 population
Athlone station	Rail transport hub
Balbriggan station	Rail transport hub
Ballina Station	Rail transport hub
Bettystown	>10,000 population
Carlow station	Rail transport hub
Carrigaline	>10,000 population
Castlebar station	Rail transport hub
Ceannt Station Galway	Rail transport hub
Clonmel	>10,000 population
Cobh	>10,000 population
Connolly Station	Rail transport hub
Cork Airport	Transport hub
Dublin Airport	Transport hub
Dublin Port	Facilitates passenger ferries / cruise ships
Dun Laoghaire Harbour	Facilitates passenger ferries / cruise ships
Ennis station	Rail transport hub
Enniscorthy	>10,000 population
Galway Harbour	Facilitates passenger ferries / cruise ships
Greystones	>10,000 population
Heuston Station	Rail transport hub
Kent Station Cork	Rail transport hub
Killarney	>10,000 population
Leixlip	>10,000 population
Longford Station	Rail transport hub
MacBride Station Drogheda	Rail transport hub
MacDiarmada Station Sligo	Rail transport hub

Secondary Nodes	Basis for inclusion
MacDonagh Station Kilkenny	Rail transport hub
Malahide	>10,000 population
Mallow	>10,000 population
Maynooth	>10,000 population
Middleton	>10,000 population
Monaghan	>5000 but less than 10,000 population but largest town in the region
Mullingar station	Rail transport hub
Sallins & Naas station	Rail transport hub
Newbridge station	Rail transport hub
O Hanrahan Station Wexford	Rail transport hub
Plunkett Station Waterford	Rail transport hub
Port of Cork	Facilitates passenger ferries / cruise ships
Port of Waterford	Facilitates passenger ferries / cruise ships
Portlaoise Station	Rail transport hub
Roscommon	>5,000 but less than 10,000 population but largest town in the region
Rosslare Europort	Facilitates passenger ferries / cruise ships
Shannon Airport	Transport hub
Skerries	>10,000 population
Thurles	>5,000 but less than 10,000 population but largest town in a sparsely populated region
Tramore	>10,000 population
Tullamore	>10,000 population
Westport Station	Rail transport hub
Wicklow station	Rail transport hub



## Step 2 – Identify Connections

Connections between nodes were established and links connecting the Primary and Secondary Nodes were developed. These connected primary nodes to adjacent primary and secondary nodes, as well as secondary nodes to adjacent primary nodes (either directly or via another secondary node).

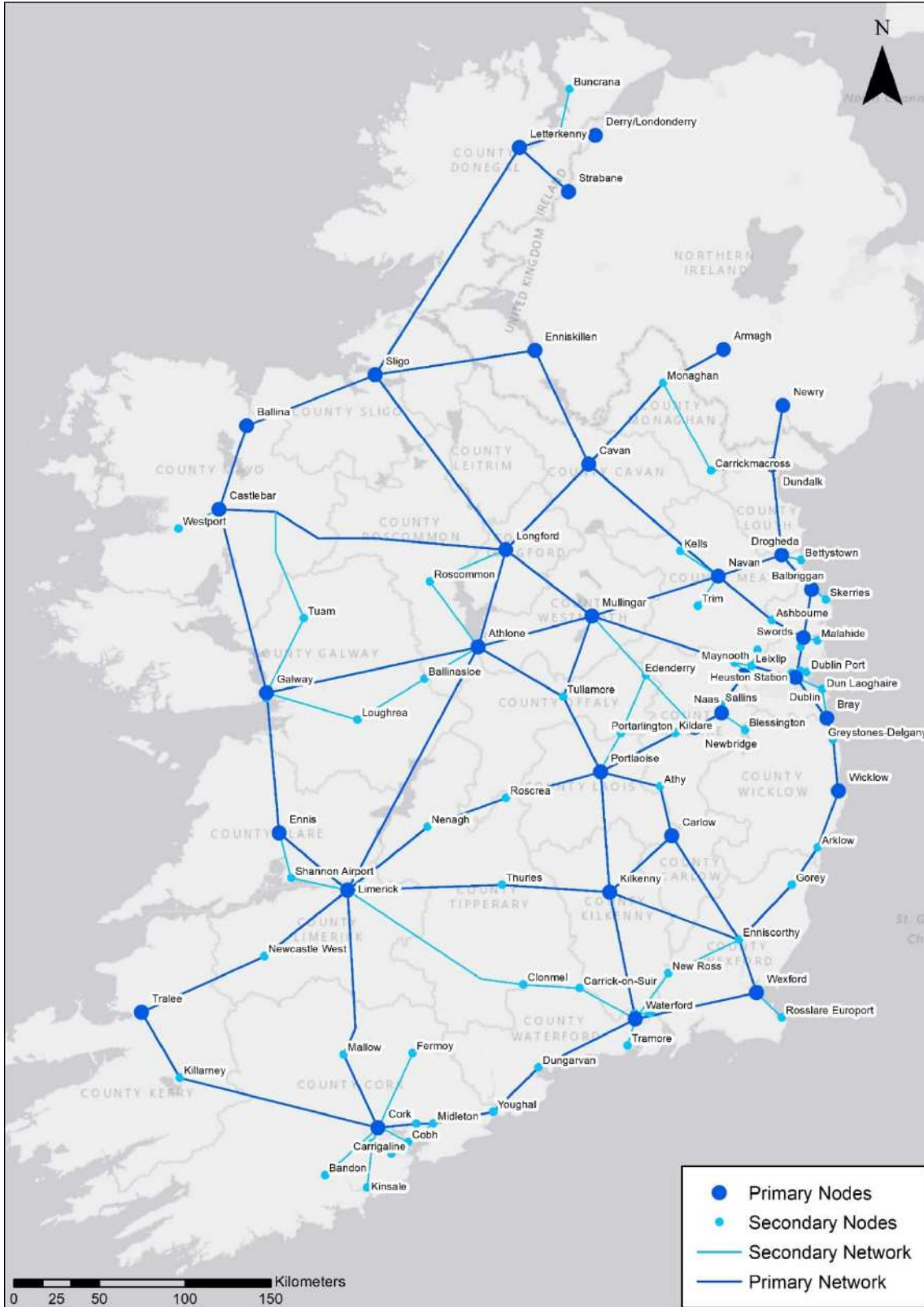


Figure 4.2: NCN Nodes and Links



### Step 3 – Stakeholder Workshop: Destinations & Links

Workshops were held with key stakeholders to discuss and agree the nodes included in the NCN, as well as the proposed links between nodes. Stakeholders included the Department of Transport, the NTA, the CCMA, Fáilte Ireland, Sport Ireland, Cyclist.ie.

The discussions primarily revolved around defining primary and secondary nodes, and the density of the resulting cycle network. Initially, a population threshold of 10,000 or more was proposed for settlements, but it was deemed insufficient to provide comprehensive coverage. After engaging with stakeholders, it was unanimously agreed to lower the threshold to settlements with a population greater than 5,000 people. Additionally, transportation hubs such as train stations, airports, and ferry / cruise ship ports were identified as key nodes. Smaller settlements and other significant destinations like educational centers, recreational spots, and tourist attractions were classified as other nodes. This approach was agreed as it would lead to a suitably dense national network.

### Step 4 – Identify Corridors

Once the NCN primary and secondary nodes were determined, the Links from Stage 2 were refined to develop corridors and corridor options connecting primary and secondary nodes. The purpose of this stage was to refine these links and to develop a series of corridor options. Corridor options were indicative alternatives of how to connect the primary and secondary nodes and aim to provide connections to other nodes (e.g., smaller settlements) where appropriate. An example of the corridor development approach is illustrated in Figure 4.3.

The identification of corridor options factored in multiple data sets using the NCN GIS dashboard developed for this purpose and targeted the use of existing or planned cycling (and other linear) infrastructure whenever possible.

- Corridors connect:
  - Primary nodes (●) and Secondary nodes (●)
- Corridors aim to incorporate:
  - Tertiary nodes, i.e., smaller settlements (●), centres of education, centres of employment, leisure destinations, and tourist destinations
  - Existing cycle networks / infrastructure (—, —, —)
  - Planned cycle networks / infrastructure (—, —)
  - Other existing or natural resources, e.g., disused railways (—)



Figure 4.3: Example of Corridor Development -- NCN GIS dashboard (left), proposed NCN corridor options (right)



Where more than one potential corridor alignment existed for a given linkage between two nodes, possible corridor options were assessed as outlined in Step 5 to identify the best performing option for inclusion in the NCN. Identified corridors were approximately 4km wide and did not include any design information.

## Step 5 – Corridor Options Assessment

Where multiple options for NCN corridors had been identified, the performance of each option was determined by consideration against a range of assessment criteria as described below. The assessment of corridor options against these criteria was informed by a series of specific data sets as summarised in Table 4.3. Full details of the assessment approach, results and a list of the preferred corridor options are provided in Appendix E.

**Table 4.3: Assessment Framework Summary Table**

NCN Plan Objectives	NCN Assessment Criteria	Data Set
Increase the number of cycle trips by improving the provision of safe and attractive cycling infrastructure. Connect to strategic destinations outside of urban areas as appropriate (including centres of education, centres of employment, and leisure destinations).	Commuter Trips	Database of smaller settlements between the 1,000 and 5,000 population (Other Nodes)
	School Trips	Data base of Primary and Secondary Schools - Developed by AECOM
	Leisure Trips	Data base of leisure facilities – including sports clubs and off-road trails - Developed by AECOM
Promote the design of cycling infrastructure that meets safety requirements. Promote the design of cycling infrastructure that provides a safe and secure environment for all users.	Potential Safety Impacts	National Transport Models Road Network showing flows in the form of AADT, posted speed limits and average speeds.
Integrate with existing and proposed cycling infrastructure (including greenways, safe routes to schools, the EuroVelo network, Interreg projects), as appropriate Incorporate existing greenways, disused railways, canals, bypassed national roads, regional and local roads, long distance trails, as appropriate. Propose corridors to maximise the number of users. Future-proof cycle route capacity, taking account of population growth and additional demand from modal shift. Connect to strategic destinations outside of urban areas as appropriate (including centres of education, centres of employment, and leisure destinations).	Integration with Existing Cycle Infrastructure	Database of existing cycle infrastructure – including greenways, Blueway's and Eurovelo routes – developed by AECOM
	Integration with Planned Cycle Infrastructure	Database of proposed cycle infrastructure – including greenways, Blueway's and Eurovelo routes – developed by AECOM
	Integration with Existing Infrastructure	Database of disused railways developed by AECOM
	Integration with transport modes	Database of train stations - Developed by AECOM
	Integration with Tourist Attractions	Fáilte Ireland database of tourist attractions with visitor numbers <200k total visitors in 2019.
	Scenery and Route Attractiveness	ESRI Basemap





NCN Plan Objectives	NCN Assessment Criteria	Data Set
Enhance local environments and biodiversity where possible (e.g., pollinator plans, green corridors). Support the development of cycling and walking culture in Ireland.	Impact on sensitive areas	Database of Special Protection Areas, Special Areas of Conservations and Proposed National Heritage Areas / National Heritage Areas and architectural conservation areas – Developed by AECOM.
Connect to strategic destinations outside of urban areas (including transport hubs and tourist destinations), as appropriate.	Social Inclusion	Pobal deprivation index - Developed by AECOM
	Integration with Smaller Settlements	Database of smaller settlements between the 1,000 and 5,000 population (Other Nodes)
	Gradient	ESRI Contour Maps

Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) were integral to the option selection process.

SEA is a systematic process for evaluating the environmental consequences of proposed plans or programmes to ensure environmental issues are fully integrated and addressed at the earliest appropriate stage of decision making, with a view to promoting sustainable development. The assessment identified and evaluated the likely significant effects of each potential corridor option on an established baseline. The results of this assessment, contained in the SEA Environmental Report (Appendix G), was integral to the identification of the preferred corridor options.

An AA is an assessment of the potential adverse effects of a plan or project (in combination with other plans or projects) on the Natura 2000 network of European sites, i.e. Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Appropriate Assessment was integral to corridor assessment because likely significant effects cannot be dismissed alone, except for corridors 11 (Westport to Castlebar), 26 (Newcastle West to Tralee / Limerick), 57 (Newbridge to Naas) and 68 (Naas to Dublin), which could be screened out of AA because there are no European sites within the 4km corridors. The AA concluded that the flexible nature of the proposed NCN corridors provides the ability for all final cycle routes to be designed in such a way as to minimise and potentially avoid impacts rendering them non-significant, so long as the mitigation measures and development process outlined in the NIS, and summarised in Section 7.6, are employed.

The Appropriate Assessment is provided as part of the Natura Impact Statement in Appendix I.

## Step 6 – Stakeholder Workshop

Having successfully completed Step 5, a comprehensive network of individual corridors between NCN Nodes was identified. The proposed corridors were those that best served the needs of the local community, having the potential to provide for the highest number of cycling trips and aligning with the objectives of the NCN Plan.

The next step in the NCN development process was to hold a series of workshops to discuss the network and allow stakeholders raise any potential issues. Stakeholders included the Department of Transport, the NTA, the CCMA, Fáilte Ireland, Sport Ireland, Cycling Ireland, Cyclist.ie.

The discussions focused on the process used to develop the corridors and a review of the resulting network. The issue of network coverage on the west coast was again highlighted but reviewing the proposed NCN in the context of other existing and planned cycle infrastructure (i.e., EuroVelo routes and greenways) it was agreed that the coverage and density of the corridor options presented achieved the project objectives and provided the intended core network.



## Step 7 – Public Consultation

The emerging NCN network was presented for public consultation to solicit the public's views and opinions on the identified nodes and corridors and gain valuable feedback. Many of the stakeholders involved in previous workshops also submitted detailed feedback on the proposed NCN.

Some of the main points raised by submissions received during the public consultation in relation to the proposed network included:

- Expanding the network to include additional greenways and rural settlements.
- Incorporating (and upgrading) existing (and proposed) cycle infrastructure where possible.
- Integrating with local cycle networks and connect town centres.

Feedback from public consultation was incorporated during finalisation of the NCN Plan and is included in Appendix C of this report.



# Feedback on NCN Proposals



## 5 Feedback on NCN Proposals

As outlined in Section 4, a five-week public consultation process was undertaken on the emerging NCN to determine the public view on the identified nodes and corridors. The overall sentiment of feedback received was supportive of the proposed NCN and the development of additional cycle infrastructure. The main points raised by the submissions received, which were used to finalise the proposed network, are outlined below.

### 5.1 Safety

Safety was identified as a major concern, with specific mention of the need for segregated routes and the impact of vehicle volume and speed.

One major concern identified was the need for segregated routes. Respondents noted that separating different modes of transportation, such as cars, buses, and bicycles, can reduce the risk of collisions and improve overall safety.

Many respondents also highlighted that high volumes of traffic and high speeds can increase the risk of accidents, especially for vulnerable road users such as pedestrians and cyclists. It was suggested that measures such as reducing speed limits in areas with high pedestrian or cycle traffic or implementing traffic calming measures to slow down vehicles can help to improve safety.

### 5.2 Incorporating and Upgrading Existing Cycle Infrastructure

Many survey respondents suggested incorporating and upgrading existing cycle infrastructure into the proposed NCN. This would be an efficient and cost-effective way to improve the NCN and connect key destinations. Respondents highlighted that many existing routes and infrastructure are underutilised and in need of repair. Incorporating such routes and upgrading existing infrastructure would make them more attractive and safer for people to use. Furthermore, it will support local communities and economies by attracting more people to the area.

### 5.3 Leisure and Exercise Use of the NCN

The primary expected uses for the network were identified as leisure and exercise. Many respondents stated that they would use the NCN for recreational activities such as cycling with their family, going for a leisurely bike ride, or as a way to stay active and healthy. Additionally, there was enthusiasm about the opportunity to explore new areas and scenic routes through the use of the NCN. This highlights the importance of developing a network that not only provides safe and accessible transportation but also promotes healthy lifestyles and outdoor activities.

### 5.4 Access and Segregation

The lack of access to the proposed network was cited as an issue, with many respondents indicating that the proposed routes did not pass near their geographic area. This highlights the need to ensure that the NCN is well connected to key destinations and areas of high population density and the wider networks. Additionally, non-segregated routes, where bicycles and motor vehicles share the same space, were also identified as a concern among respondents. Many respondents stated that they felt unsafe or uncomfortable cycling on routes shared with motor vehicles, leading them to avoid using such infrastructure. This highlights the importance of providing dedicated and separate infrastructure for bicycles where necessary to ensure the safety of the users.

### 5.5 Greenways and Rural Settlements

Respondents suggested that the proposed NCN should be expanded to include additional national and regional greenways and rural settlements. It was suggested that the proposed network did not



sufficiently cover these areas, and that including more greenways and rural settlements would allow for more opportunities for outdoor recreation and exploration. Greenways are typically multi-use paths that are set aside for pedestrian and bicycle use, often built along disused rail corridors, canal towpaths, river-valleys and scenic routes. They provide a safe, car-free environment for people to walk, cycle and enjoy the natural environment. Rural settlements are typically found in the countryside and are small towns or villages that offer a unique opportunity for people to explore and experience the local culture and way of life.

Respondents also pointed out that including greenways and rural settlements in the NCN would provide more options for people to use the network for leisure, tourism and exercise. It would also support the local communities and economies by attracting more visitors. Therefore, the inclusion of greenways and rural settlements in the NCN would not only provides more opportunities for active transport but also promotes healthy lifestyles, outdoor activities and sustainable tourism.

## 5.6 Local Network and Town Centre Integration

Respondents suggested integrating the NCN with local networks and connecting town centres for better connectivity, accessibility, and user-friendliness. This would also promote active transportation and sustainable tourism. Integrating the NCN with local networks would connect key destinations such as homes, workplaces, and local amenities to the NCN, making it more accessible to a wider range of users. Connecting town centres to the NCN would also make it easier for people to access the network and promote active transportation and sustainable tourism. Many town centres currently lack good connections to the NCN, making it difficult for people to access these areas by bicycle. By integrating the NCN with local networks and connecting town centres, the NCN would become more attractive and accessible to a wider range of users and would also contribute to the promotion of active transportation and sustainable tourism.

## 5.7 Conclusion

The feedback received validated both the approach taken to developing the network and the proposed network. It also provided important input from both specific stakeholders and the general public which was incorporated into an updated version of the network, network design principles and monitoring framework. More detailed information on feedback to the NCN Plan can be found in Appendix C.

# National Cycle Network





## 6 National Cycle Network

### 6.1 Overview

The final network after the consideration of the public consultation feedback is presented in Figure 6.1. The network is composed of 85 corridors across a network of approximately 3,500km in length and connects to over 200 settlements with a combined population of over 2.8million people<sup>5</sup>. With 80% of houses and 89% of jobs located within 5km of the network<sup>6</sup> the network provides an excellent level of connectivity nationally.

Figure 6.2 shows the final NCN integrated with both existing and planned cycle networks and infrastructure including: planned national and regional greenways<sup>7</sup>, Eurovelo 1, Eurovelo 2 and Planned Northern Ireland greenways.

The current status of the network is as follows:

- **Existing infrastructure:** Approximately 400km of the NCN is currently in use as existing greenways or other suitable cycle infrastructure.
- **Proposed / planned greenways:** Approximately 950km of the NCN is currently included in the National and Regional Greenways Programme.
- **Remaining network:** The remaining 2,150km of the NCN will require the provision of new infrastructure outside the national and regional Greenways Programme and associated funding.

**Table 6.1: Length of NCN by Current Status**

Current Status	Approximate Length (km)
Existing infrastructure	400
Proposed / planned greenways	950
Remaining (i.e., neither existing cycle infrastructure nor proposed / planned greenway)	2,150
<b>Total length</b>	<b>3,500</b>

<sup>5</sup> Based 2016 Census

<sup>6</sup> Based on GeoDirectory Q4 2021 and 2016 POWSCAR respectively

<sup>7</sup> Note: Illustrated routes are indicative. Final Greenway routes have not yet been determined.

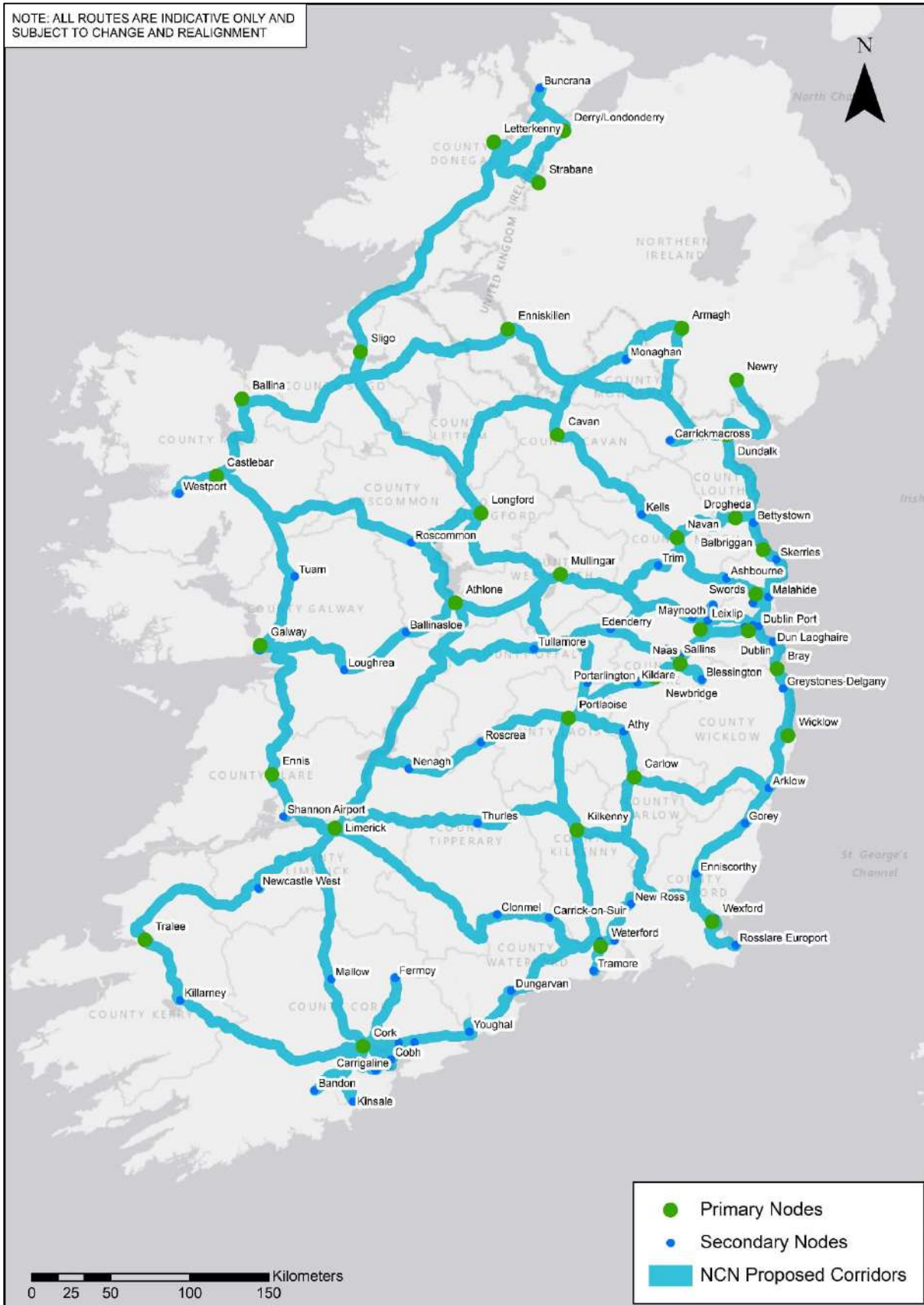


Figure 6.1 Preferred Corridors for NCN Post Public Consultation



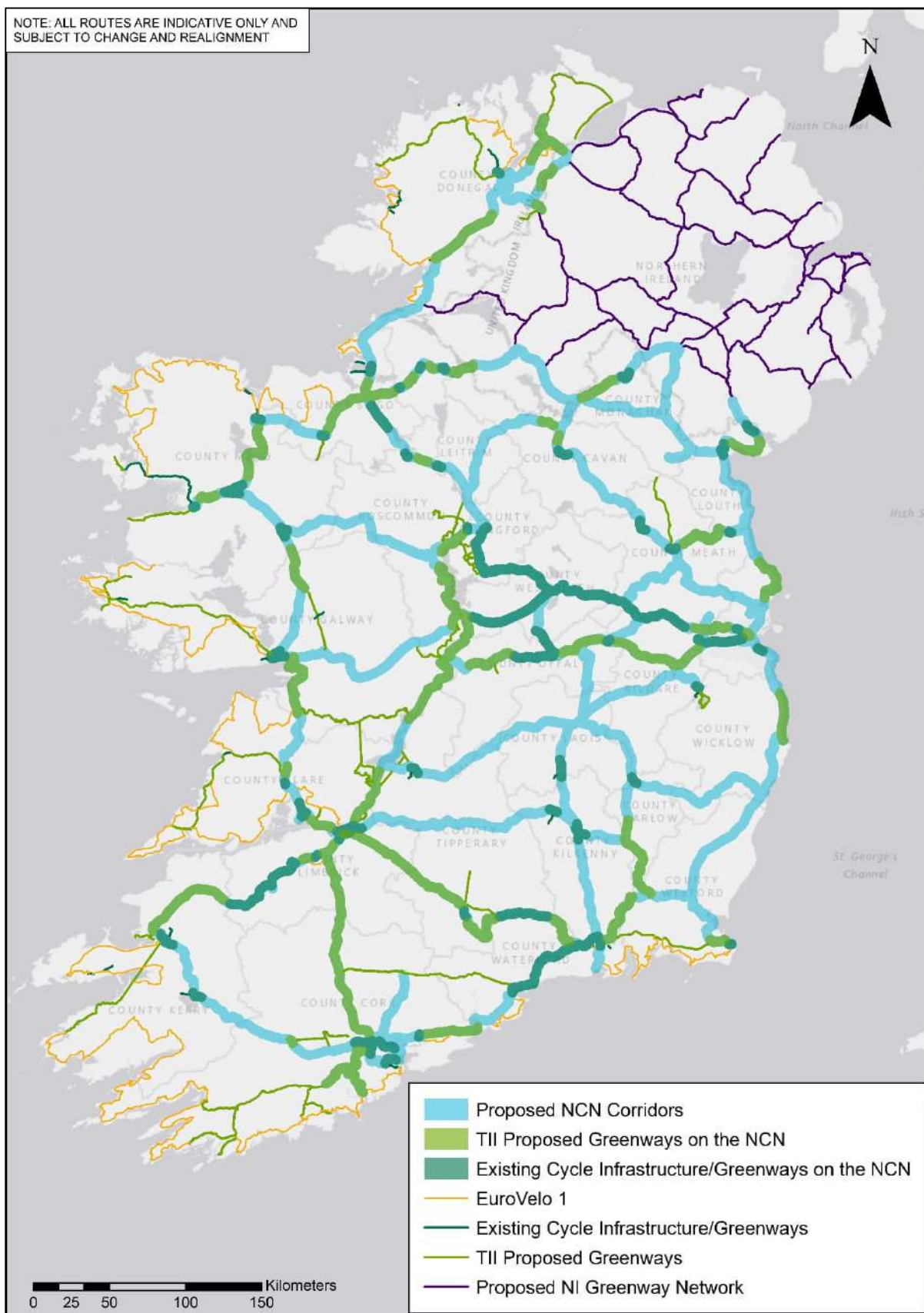


Figure 6.2 Preferred Corridors for NCN Post Public Consultation, Existing and Planned Cycle Networks / Infrastructure



As an inter-urban network, it is proposed that the NCN will extend into urban areas, connecting one urban centre to another. Where an urban cycle network already exists (or is planned), the NCN will integrate with the highest quality of service or most appropriate route to the urban centre (e.g., connecting with a segregated cycle track rather than unprotected cycle lane). Where an urban cycle network does not exist (or is in the planning stage), the NCN integration points will be reassessed in line with planning stages.

Continued close collaboration with the NTA and local authorities will assist in successfully integrating the NCN with existing and planned urban networks across the country. Figure 6.3 an example of the NCN integrating with a local / urban network.

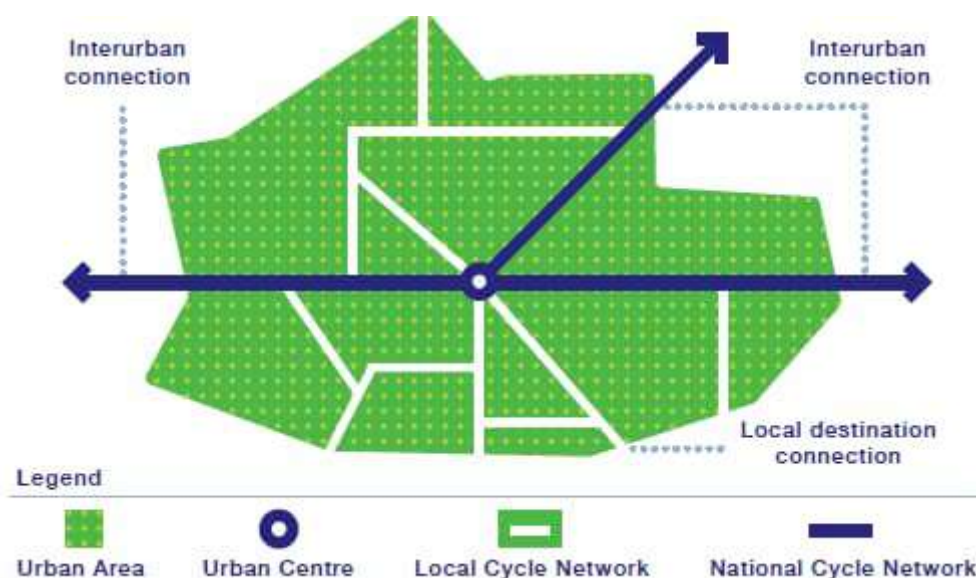


Figure 6.3: NCN Integration with Local / Urban Cycle Network

## 6.2 Benefits of the NCN

As well as contributing to Ireland's commitments to sustainability and decarbonisation, successful implementation of the NCN Plan will provide many benefits for cyclists and communities across Ireland, including:

- Ensuring delivery of a high-quality cycle network which will promote safety, comfort and increased participation in cycling.
- Improving sustainable connectivity for nationally and providing links with other networks such as CycleConnects, EuroVelo and Northern Ireland networks.
- Supporting both urban and rural economies through increased leisure and tourism cycling.
- Improving public health through well documented benefits of more active travel.
- Guiding how local authorities prioritise exchequer-funded investments in cycle infrastructure.
- Making use of existing infrastructure wherever possible including greenways, road infrastructure, and declassified roads where safe and appropriate cycle experiences can be provided.

Some of documented evidence of the potential benefits arising from cycle network delivery internationally are as follows:

- Investing in cycling infrastructure offers a high return on investment. For example, the UK Department for Transport estimates that the average benefit-cost ratio for walking and cycling



delivers benefits of 13 to 35 times the cost<sup>8</sup>. In New Zealand, transport planners estimate that money spent of cycling infrastructure delivers benefits of between 10 to 25 times the costs<sup>9</sup>.

- Cycle tourism will add to the economic benefits of cycling. As an Irish precedent, a survey of users of the Waterford Greenway showed that 68% of the respondents that lived outside of Waterford said that the Greenway was the main reason for their visit, while a further 20% said it was "somewhat important". Of the respondents who had accommodation costs, it averaged €106 per night, while the average spend on food drink and bike hire of users sampled was €16.90 per day<sup>11</sup>. This expenditure will support local businesses that are likely to develop around the NCN providing services for users such as coffee shops, restaurants, bicycle rental and bicycle repair, all of which will contribute to the local economy.
- The European Cycling Federation estimates that cycling tourism is worth approximately €44 million to the European economy, higher than that of the cruise ship tourism<sup>12</sup>. International cycle tourism represents only a small proportion of tourism in Ireland at present, however, this sector may grow particularly with growth of the cycle network facilitating movement between key nodes and tourism destinations.
- Encouraging more active modes of travel using safe infrastructure has benefits including reducing the risk of disease and enhancing mental health. The health benefits from cycling have also been associated with increased productivity. In Copenhagen, residents who cycle have requested 1.1 million fewer sick days which is approximately 2 fewer sick days per resident. Similarly, children travelling to school by bicycle are likely to have greater concentration<sup>13</sup>.
- Environmental benefits can be achieved even for small changes in behaviour. A study of 2,000 urban dwellers across Europe has shown that switching from car to bike for one trip, just one day per week, resulted in a reduced carbon footprint of about 0.5 tonnes over the year<sup>14</sup>. Therefore, investing in the NCN to provide safer connections between amenities and urban settings, has the potential to result in small, but cumulatively significant, changes in behaviour of the 2.8 million people that will be living close by.

### 6.3 NCN Infrastructure Requirements

Safety was highlighted as a key concern during public and stakeholder consultation. While the NCN Plan does not include design for specific routes, the provision of a safe and attractive network that is fully accessible is included in the plan's vision statement. Design principles for the NCN to meet its objectives in relation to safety and accessibility were developed based on an assessment of both international and national standards and approaches.

#### Design Case Studies

In the development of the NCN Plan, cycle network design guidelines / requirements currently in place in Germany, the United Kingdom (UK), and the Netherlands were reviewed. Appendix B presents these case studies including relevant details regarding existing cycle infrastructure and cycle trips, cycle policy, and examples of specific design requirements (focusing on link types),

Each of the policies and design guidelines examined include overarching goals, objectives and / or principles to assist planners / designers in their work. While the segregation of modes is prioritised in each country as a key element of providing safe cycle infrastructure, it is acknowledged that this is not

<sup>8</sup> *Transport for London, Economic Benefits of walking and Cycling.*

<sup>9</sup> *Macmillian, A, Connors, J., Witten, K, Kearns, Rees, D., & Woodward, Alistair. (2014). The societal costs and benefits of commuter bicycling: Simulating the effects of specific policies under system dynamic modelling. Environmental Health Perspectives. 122(4).*

<sup>11</sup> *AECOM,(2017). Waterford Greenway Intercept Survey 201. Baseline Survey Report.*

<sup>12</sup> *Cycling worth €150 billion a year to the EU economy, says new report | road.cc*

<sup>13</sup> *The Danish cycling culture | Read why Danes bike everywhere (denmark.dk)*

<sup>14</sup> *Brand, C., Götschi, T., Dons, E., Gerike, R., Anaya-Boig, E., Avila-Palencia, I., ... & Nieuwenhuijsen, M. J. (2021). The climate change mitigation impacts of active travel: Evidence from a longitudinal panel study in seven European cities. Global environmental change, 67, 102224.*



always achievable. Including guiding principles as well as minimum standards allows planners / designers some flexibility to work within whatever restrictions each project presents while also aiming to provide a safe and inviting experience for the cyclist. As such, while the recommended lane width may vary, the overarching priority of ensuring a safe trip for cyclists is common to all.

It is interesting to note the different approaches taken to determining the most appropriate cycle infrastructure, as follows:

- Germany considers the vehicle speed limit of the road and the peak hour flow of cyclists.
- The UK considers the vehicle speed limit of the road and the total motor traffic flow per hour.
- The Netherlands considers the ratio of motorists to cyclists within a certain timeframe.

The findings from the design case studies helped to inform the design principles outlined below. These principles follow a similar approach of defining preferred and potentially acceptable infrastructure types. These are effectively minimum standards for the NCN. The decision on which type of infrastructure to use on which corridor will be case-specific, however and will depend on factors such as vehicular speed limits and traffic flows as well as potential cycle demand.

## NCN Design Principles

A review to determine suitable cycle infrastructure types for the NCN also looked at approved cycle infrastructure in Ireland based on the following national guidance documents:

- The NTA National Cycle Manual (cyclemanual.ie).
- TII Design Standard "Rural Cycle way Design (Offline & Greenway)".<sup>15</sup>
- TII Advice Note "Provisions for Cyclists and Pedestrians on Type 2 and Type 3 single carriageway National Roads in rural areas".<sup>16</sup>

The infrastructure types were considered in the context of the objectives of the NCN Plan and the findings of the design case studies to determine their suitability for use in the NCN. At this stage, a number of infrastructure types were deemed unsuitable and removed from consideration.

The infrastructure types, summarised in Table 6.2, are classified as:

- **Preferred** - The desired standard for infrastructure on the NCN. Where possible, every effort should be made to ensure that one of these infrastructure types is implemented when delivering a route; or
- **Potentially Acceptable** – It is acknowledged that it may not always be possible to provide one of preferred infrastructure types in some locations due to site and / or other constraints. In such circumstances, these infrastructure types may be acceptable, subject to site-specific evaluation.




As well as traditional cycle infrastructure types, consideration has also been given to the potential use of "quiet" roads as part of the proposed network – existing roads where traffic volume and speed could be managed to provide a cycle friendly environment for cyclists. A separate study is being undertaken to produce a recommendation in regard to incorporating existing shared road space (i.e., "quiet" roads) into the proposed NCN and detailing the standard of potential interventions required for this type of facility, particularly in rural settings.

<sup>15</sup> <https://www.tiipublications.ie/library/DN-GEO-03047-03.pdf>




<sup>16</sup> *Although this advice note has been withdrawn, it is considered applicable for identifying the types of cycle infrastructure typically found on national roads in rural areas.*






Table 6.2: Types of Infrastructure Identified and Suitability for use on the NCN

Type	Description	Example	Note / Comment	Suitable Location	Classification
<b>Cycle Trail</b>	A facility which is distinct from the vehicular road corridor and comprised of elements such as canal tow paths, disused railways and other such paths		Fully segregated infrastructure	<b>Both Rural &amp; Urban</b>	<b>Preferred</b>
<b>Off-Road Cycleway (cycle track)</b>	Physically separated from the vehicular road carriageway by a verge or some other form of physical segregation; however, it remains within the road corridor		Physical segregation desirable for NCN,	<b>Rural</b>	<b>Preferred</b>
<b>On-Road Cycle lane (TII):</b>	Located within the contiguous road pavement surface and is separated from motorised traffic by a segregation strip at least 0.5m wide and delineated by road markings		More physical segregation preferable for NCN, however, continuous white line separation may be appropriate for certain sections / locations.	<b>Urban</b>	<b>Potentially Acceptable</b>



Type	Description	Example	Note / Comment	Suitable Location	Classification
<b>Standard Cycle Track (NTA) – At-Grade</b>	Segregation between cyclist and motorised vehicles through bollards		More definitive physical segregation preferable for NCN	<b>Both Rural &amp; Urban</b>	<b>Potentially Acceptable</b>
<b>Standard Cycle Track (NTA) – Behind Verge</b>	Grass or paved verge separating cycle track from carriageway		Similar to TII off-road cycleway	<b>Urban</b>	<b>Preferred</b>
<b>Contra-Flow</b>	Cycle facilities within an urban one-way system		Cycle facilities within an urban one-way system.	<b>Urban</b>	<b>Potentially Acceptable</b>



Type	Description	Example	Note / Comment	Suitable Location	Classification
<b>Standard Cycle Track (NTA) – Raised</b>	Physical segregation by full kerb height between cyclist and motorised vehicles		Physical segregation preferable for NCN	<b>Urban</b>	<b>Preferred</b>
<b>Standard Cycle Track (NTA) – Two-Way</b>	Physical separation from carriageway by dividing verge. Physical separation from footpath by verge or height difference		Physical separation preferable for NCN	<b>Both Rural &amp; Urban</b>	<b>Preferred</b>
<b>Quiet Roads</b>	On carriageway shared use of existing roads, where traffic volume and speed are managed to provide a cycle friendly environment for cyclists		Separate study being undertaken to develop this option	<b>Rural</b>	<b>Potentially Acceptable</b>



## 6.4 Awareness and Education

Both national and international best practice, highlight the importance of supporting investment in cycle networks for a successful outcome. Marketing campaigns to promote the network and to raise awareness of safe use of the network may also be developed. While these elements are outside the scope of this NCN Plan, it is recommended that they are considered as part of the overall plan for delivery.

To increase awareness of the network, it is recommended that the following actions be considered at minimum:

- Identity – A unique and recognisable NCN identity for use in both wayfinding / on-road signage and online / printed material should be developed.
- Campaign – A campaign to promote the NCN and inform the public and targeted user groups should be delivered.
- Online resources – Accessible online maps and route planners should be developed to allow users plan and review potential trips on the NCN. These should be integrated with other cycle networks and infrastructure to provide a seamless experience for cyclists.

Safety was highlighted as a major issue by both stakeholders and members of the public. Educating the public and users of the NCN on appropriate behaviour will be an important element to ensuring a safe and attractive cycle network. This particularly relates to interactions between vehicles, cyclists and / or pedestrians.



# Implementation of the NCN





## 7 Implementation of the NCN Plan

### 7.1 Overview

Throughout development of the NCN Plan, particularly in relation to benchmarking and stakeholder engagement, a number of key factors were identified which would support successful delivery of the NCN, as follows:

- It should be planned and delivered as a single programme on a phased basis, rather than a series of inter-related projects, to ensure a coherent and integrated approach. Appropriate programme management governance structures should be put in place to facilitate this.
- It should provide a consistent final product across all projects.
- Focus should be on providing a coherent network, with regional balance.
- NCN branding and identity (e.g., consistency of logo, wayfinding, user experience) and wayfinding strategies should be developed.
- Identification and development of routes should adhere to the adopted NCN Plan Objectives.
- NCN projects should be monitored and evaluated to provide lessons learned for subsequent stages of delivery.
- The development of the NCN shall comply with environmental and planning requirements.

### 7.2 Implementation Cost

High-level cost forecasts were developed to provide an indicative range for delivering the entire NCN. It was not possible to develop a detailed forecast of costs as neither the specific routes nor the link types are determined at this stage. As such, the high-level cost forecasts are based on a number of assumptions, as follows:

- Indicative costs per km were based on the best available information in 2022 and does not include inflation or fluctuations to underlying inputs (e.g., labour, materials). The costs applied are presented in the table below.
- To inform the distribution of cost across implementation phases, it was assumed that 10% of costs will be allocated to the planning and design phases and the remaining 90% to construction.
- Lengths are based on the centreline of NCN corridors and the assessment of known existing and planned cycle infrastructure.
- To ensure the forecasts cover a range of potential infrastructure requirements, costs for two scenarios have been developed as follows:
  - Scenario 1. Provides a high level of segregated infrastructure using off-road cycleways and the remainder on shared / "quiet" roads.
  - Scenario 2. Provides a low level of segregated infrastructure using off-road cycleways and the remainder on shared / "quiet" roads.

**Table 7.1: Indicative Cost per km by Infrastructure Type**

Infrastructure Type	Cost per km
Cycle Trail (Greenway)	€ 1,000,000
Off-road Cycle Way	€ 490,000
Standard Cycle Track	€ 270,000
Quiet Road	€ 170,000
Signage & amenities only (for existing cycle infrastructure)	€ 75,000

Based on these cost assumptions, the estimated total cost of delivering the NCN is €1.49bn to €1.91bn, based on 2022 figures with no allowance for inflation. Approximately €30m will be required to upgrade the existing infrastructure to include the NCN design standard, especially signage. The cost of planned greenways is €940m while the remaining infrastructure will cost between €520m and €940m, depending on the type of infrastructure to be delivered.

**Table 7.2: Estimated Costs for Infrastructure Scenarios (€M)**

Current Status	Estimated Cost (€M)	
	Scenario 1	Scenario 2
Existing infrastructure (resigning costs)	€30	€30
Proposed / planned greenways	€940	€940
Remaining (i.e., neither existing cycle infrastructure nor proposed / planned greenway)	€940	€520
<b>Total (€M)</b>	<b>€1,910</b>	<b>€1,490</b>



## 7.3 Phased Implementation

Implementation of the NCN Plan will be across three phases from 2023 to 2040, as follows:

- Phase 1 – 2023 to 2025.
- Phase 2 – 2026 to 2030.
- Phase 3 – 2031 to 2040.

Funding and resource availability will dictate the speed of roll out of the network and the following principles have been applied in identifying how much of the network can be delivered in the various phases:

- The NCN will be funded in accordance with the National Development Plan funding envelopes for the period up to and including 2030. In effect this means that circa €60m per annum will be available for the Greenways Programme and the rural elements of the NCN. Urban elements of the NCN will be funded and delivered through the NTA active travel programmes.
- For the period post 2030, the level of funding which will be available for the NCN is unknown. As such, certain assumptions have been made around delivery of the NCN which will need to be reviewed once clarity around funding levels are available.
- As noted in Section 7.2 above, base cost assumptions in this report are based on 2022 costs only. In order to identify the length of network which could be delivered by 2030, an average annual inflation of 3% per annum has been assumed.

Within the constraints identified above and in order to prioritise which corridor will be progressed in each phase, a two-step approach was taken. Firstly, a high-level multi-criteria analysis (MCA) was undertaken to rank each corridor. The criteria used, summarised in the table below, were developed based on the NCN vision and priorities for delivery. Each corridor was scored and ranked against all other routes.

**Table 7.3: Route Implementation Criteria**

Criteria	Metrics
Demand 1	Corridors were scored based on the scale of potential demand. The population served by the corridor was used as a proxy, this included the population of the nodes at either end of the corridor, as well as the populations of any settlements within the 4km wide corridor. Priority was given to corridors which served higher total populations.
Demand 2	Consideration was given to the number of attractors and destinations along each route. This included activities, attractions, schools and sports facilities and was determined on a per kilometre basis, to avoid bias towards longer routes.
Route Length	Considering the initial focus on quick wins, shorter routes were scored higher.
Planning Status	Routes were scored based on their planning status, i.e., their current stage of project delivery. The highest score possible was given to routes that already exist and could be incorporated into the NCN immediately (although ancillary work may be required to bring them up to the required standard). Higher scores were given to routes that are already in planning, have secured funding, or have commenced design.
Network Coherence	Routes on the NCN that intersect existing routes will provide a greater level of network coherence. For each NCN route, the total length of other cycle routes within a 2km buffer was therefore determined. Routes with a greater total length were ranked higher.



Criteria	Metrics
Safety	The NCN is intended to provide safe facilities for cyclists. High traffic speeds and traffic volumes reduce the perception of safety for cyclists. As such, priority was given to corridors with high traffic speeds and / or volumes, to improve the existing situation in terms of actual and perceived safety.
Social Benefits	Higher scores were given to routes with higher social benefits for example routes serving areas with high social deprivation scores or those serving areas that do not have an existing public transport service.

Once the corridors were ranked, the second step was to further analyse and break them down into distinct sub-projects based on known or assumed data. Another sifting exercise was carried out to allocate the routes into different delivery phases. The sifting process took account of several further criteria, as follows:

- **Current Status** – Projects currently underway on the NCN were prioritised as early delivery projects in the implementation phases, for example:
  - Existing cycle infrastructure that connects NCN nodes are included in Phase 1.
  - Similarly, greenways at construction stage are also included in Phase 1
  - Certain planned greenways that are in the advanced planning stage (i.e., anticipate seeking planning consent before the end of 2025) are included in Phase 2.
- **Cost / Resource Availability** – Based on the funding and resource availability noted previously, an assessment was carried out of how much of the network could be delivered in Phases 1 & 2, with the balance being delivered in Phase 3 (subject to future funding and resource availability). Account was also taken of the need to continue to deliver greenway projects which do not form part of the NCN but are necessary for purely recreation and tourism purposes.
- **Geographic Spread** – As this is a national network, consideration was given to achieving a balanced delivery nationally.

Following the assessment of each route against these criteria, a phased implementation plan was developed. At the end of the process, the three delivery phases and the approximate length of NCN to be delivered during each was identified, as outlined in Table 7.4.

**Table 7.4: Implementation Phases**

	Phase 1 (2023-2025)	Phase 2 (2026-2030)	Phase 3 (2031-2040)	Total
<b>Approximate Kilometres Delivered</b>	330km	660km	2,510km	<b>3,500km</b>

## 7.4 Governance of Implementation

The NCN Plan has been developed to aid the coordination and consistency of the National Cycle Network. Clear governance over its implementation and ongoing management will therefore be required to ensure its successful delivery. It is recommended that a single entity provides direction, oversight, and management of the delivery of the overall network. This entity could be Department of Transport, or an existing or new authority reporting to the Department. Responsibility for detailed design, planning and implementation of the network delivery will rest primarily with local authorities.



## 7.5 NCN Implementation Risks

There is a range of potential issues that could either delay implementation of the NCN Plan, drive up programme cost, or ultimately compromise the prospects of implementation completely. Whichever entity is ultimately given responsibility for implementation of the NCN Plan will need to ensure that wider risks to the overall delivery programme are managed centrally. Furthermore, that each individual project should also have its own risk register, which will identify project-specific risks and associated mitigation measures.

## 7.6 Environmental Assessment

All future NCN projects will be subject to the planning and environmental processes before advancing to construction. In this regard, specific points identified in the SEA / AA for inclusion in the NCN Plan are outlined below.

Where corridors are advanced to route selection, they must undergo a robust route selection process that will include environmental assessment. This should be informed by appropriate expertise and include measures to protect existing biodiversity features and to promote biodiversity enhancement.

Development of the NCN routes will adhere to all required environmental assessments at the design and implementation stages and will also consider the specific measures included in its AA for each of the NCN corridors. No project that has an adverse effect on the integrity of a European site will be progressed.

Initiatives brought forward under each of the corridors will require scrutiny, so should undertake a project level Appropriate Assessment (AA) screening to determine whether the initiative / route will have an adverse effect on the integrity of European sites either alone or in combination with other plans and projects.

No projects or plans 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 projects) and each project or plan brought forward under the NCN Plan should be subject to appropriate assessment screening.

Each project will be required to produce a Construction Environment Management Plan (CEMP) in accordance with all relevant legislation, serving the purpose of compliance.

The risks to the safeguarding and integrity of the qualifying interests and conservation objectives of the Natura 2000 network during the planning and design stage of any future NCN projects have been addressed by the inclusion of mitigation measures 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 NCN Plan will themselves be subject to Appropriate Assessment (AA) when further details of design and location are known.

In determining the final route alignment, new construction within 200m of European sites will be avoided insofar as possible. Existing roads and bridges will be used where feasible, and no new lighting will be introduced unless it does not affect site integrity. Detailed design requirements will be considered for potential impact on recreational access and pressure on European sites. Noise and air quality assessment will be required if new construction is necessary, and potential loss of habitat for SPA birds will be considered. Wintering bird surveys may be required, and micro-design adjustments will be made to ensure no adverse effects on European sites before works are consented.



# Monitoring, Evaluation and Learning Framework



## 8 Monitoring, Evaluation and Learning Framework

Establishing a framework for ongoing NCN monitoring, evaluation and learning is essential to measuring the success of a cycle network and to identify areas that may require improvement. It is equally important to identify the most suitable monitoring methods.

The NCN Plan is one of the most ambitious cycle infrastructure plans in the history of the State and will require significant investment to deliver. Monitoring and evaluation is a fundamental component of ensuring a clear understanding of how this investment has impacted on travel behaviour. This in turn provides metrics for determining the success (or otherwise) of the network. Combined, these allow for a cycle of continuous improvement regarding infrastructure design, development, and operation as the Plan is implemented.

It is strategically important to ensure an appropriate monitoring framework is developed for the NCN as outlined below:

- The NCN Plan objectives will be reviewed and updated when necessary. These objectives will capture the aims of the plan and allow the impact of the NCN to be measured against them. A comprehensive monitoring framework of Key Performance Indicators (KPIs) will therefore assist in determining how well the plan objectives have been met.
- The vision of the NCN Plan is to “develop a safe, connected, and inviting cycle network” and it should be seen as providing such by stakeholders and users. Tracking user perceptions of this, evaluating delivered infrastructure against it and remedying identified issues will both improve usage of the infrastructure and build support for the delivery of projects.
- The NCN Plan is to be delivered under rolling implementation plans. The lessons learned from each phase of implementation can be used to inform subsequent phases. As such, accurate and relevant information will be required to determine the success (or otherwise) of each phase of implementation in relation to both NCN Plan objectives and user perception and how this can influence subsequent implementation phases.

A framework will be established to monitor and evaluate the above key elements when implementing the NCN Plan.

The framework will contain the measures set out in the SEA Adoption Statement (Appendix H) to monitor the likely and potential significant effects of implementing the NCN Plan. Targets and indicators may include the eight main SEA themes:

1. Biodiversity.
2. Population and Human Health.
3. Land, Soils and Geology.
4. Water Quality.
5. Air Quality.
6. Climate Change.
7. Cultural Heritage.
8. Landscape.

### 8.1 Indicators and Measurements

Cycle networks and development agencies / authorities use various metrics to measure progress and identify success. Table 8.1 highlights some of these metrics that are published in various reports related to both cycle infrastructure and cycling trends. The purpose of this is to incorporate international best practices to inform the NCN KPIs. Common ongoing metrics include measuring total trips and modal





share, while pre- and post-intervention measurements aim to track the impact of specific policy and / or infrastructure changes.

Table 8.1: Comparison of Monitoring Metrics

Report	Publisher(s)	Plan Objective	Measurable KPIs
<a href="#">Walking and Cycling Index (2021)</a>	National Transport Authority (NTA), Sustrans	Increase cycling participation	% of residents who cycle and cycle at least once a week: <ul style="list-style-type: none"> <li>35% of all residents cycle</li> <li>25% of all residents cycle at least once a week</li> </ul> Proportion of residents who think cycling safety in their local area is good: <ul style="list-style-type: none"> <li>65% of all residents think level of safety for cycling in their local area is good</li> </ul>
		Benefits of cycling: why everyone gains when more people cycle	Measure behaviour and benefits: <ul style="list-style-type: none"> <li>90.2m trips</li> <li>€311.4m economic benefit to local economy</li> <li>42 early deaths prevented annually</li> <li>24k tonnes of greenhouse gas emissions saved</li> </ul>
		Cycling solutions: What would make cycling better?	Measure demand and support for interventions: <ul style="list-style-type: none"> <li>22% do not cycle but would like to</li> <li>65% would be helped to cycle more by increasing traffic-free cycle routes</li> </ul>
			Measure infrastructure improvements: <ul style="list-style-type: none"> <li>95km of traffic-free cycle routes</li> <li>118km of segregated cycle routes</li> <li>2km of signposted quieter streets</li> <li>7% of households are within 125m of these routes</li> </ul>
<a href="#">Paths for Everyone (2018)</a>	Sustrans	Increase the length of the network, helping people to get to the local park, commute or take a holiday, wherever they live in the UK.	Number of people living within defined distance of network: <ul style="list-style-type: none"> <li>4.6 million people live within a 2-minute walk of the network</li> </ul>
			Total network length: <ul style="list-style-type: none"> <li>16,500 miles</li> </ul>
		Reduce emissions from transportation by supporting a modal shift from car to cycle.	Impact of reduced road congestion due to use of cycle network: <ul style="list-style-type: none"> <li>Benefiting the UK economy by nearly £88m per year through reduced road congestion</li> </ul>
			Impact of improved health outcomes associated with walking and cycling: <ul style="list-style-type: none"> <li>Preventing 630 early deaths and averting 8,000 serious long-term illnesses in 2017</li> </ul>
Enhancing the local environment, connecting people to natural points of interest.	Number of target destinations accessible via network: <ul style="list-style-type: none"> <li>All 15 UK National Parks</li> <li>60 of 88 Areas of Natural Beauty (AONBs)</li> <li>18 of 25 UK World Heritage Sites in England, Northern Ireland and Scotland</li> </ul>		



Report	Publisher(s)	Plan Objective	Measurable KPIs
		Supporting the local / regional economy by bringing in tourists to use the network.	Impact of leisure and tourist users on local economy: <ul style="list-style-type: none"> <li>Contributing £2.5 billion to local economies in a single year (2017).</li> </ul>
		Make the network more accessible for all potential users.	Tracking removal / redesign of barriers preventing access to all users: <ul style="list-style-type: none"> <li>Removing or redesigning 16,000 barriers on the Network</li> </ul>
<a href="#">Cycling Report for Copenhagen (2016)</a>	Region H	Support the integration of multimodal trips reducing the reliance on private vehicles.	Number of cycle journeys by area / region: <ul style="list-style-type: none"> <li>Increase of 20% over 10-year period from 2007 to 2017</li> </ul>
		Establish a high level of satisfaction amongst cyclists in the capital region relative to the level of cycling satisfaction throughout Denmark.	Satisfaction levels of cyclists across various metrics by area / region: <ul style="list-style-type: none"> <li>Satisfaction with cycling, extent of the cycle path, cycling options for getting through traffic, maintenance of cycle paths and bike lanes, opportunities to combine cycling with public transport</li> <li>Recording a 75% level of satisfaction amongst the population of Copenhagen, in comparison with 48%, 61%, and 37% in the Central Denmark Region, North Denmark Region, and the Region of Southern Denmark, respectively</li> </ul>
<a href="#">The Auckland Cycling Account (2016)</a>	Auckland Transport	Establish a modal shift from car to cycle for inbound morning peak trips.	Morning peak cycle trips: <ul style="list-style-type: none"> <li>Recording an increase of 248% of cycling trips made on Upper Queen Street, and a 46% increase in cycling trips overall in the City Centre between 2013 and 2016.</li> </ul>
		Increase the overall safety of cyclists cycling on Quay Street by allowing more 'breathing space' for cyclists.	% of bikes on road versus footpath versus cycleway before and after intervention: <ul style="list-style-type: none"> <li>Observing a decrease in cyclists using the footpath from 47% to 3% after the successful implementation of a cycleway (segregated from the main road).</li> </ul>
		Provide accessible education on cycling to people, young and old throughout Auckland.	Number of public interactions: <ul style="list-style-type: none"> <li>Held 268 events and adult training courses</li> <li>Trained 794 adults in cycle training</li> <li>Enrolled 11,005 children in educational school programmes about cycling.</li> </ul>
<a href="#">Integrated Cycling Planning Guide (2014) – Good practice example of Leuven, Belgium</a>	Interreg Europe	Make the City Centre of Leuven car free, forcing a modal shift hence leading to a reduction in congestion and carbon emissions.	Cycle and car traffic, as well as bus ridership, before and after intervention: <ul style="list-style-type: none"> <li>Increasing cycling volumes in the City Centre by 32% in one year (2017) and 44% after 3 years (2019)</li> </ul>



## 8.2 Metrics

Explicit measurable KPIs will be defined at the outset of each implementation phase. This section outlines a number of potential measures that could be considered, based on the Policy Objectives used in the development of the NCN Plan.

Table 8.2: NCN Plan Policy Objectives and Potential Measures

Policy Objective	Key Performance Indicator
Reduce emissions from transportation by supporting a modal shift from private vehicles to cycling and walking.	Number of cycle trips made (by route / segment)
Encourage active travel for daily activities and recreation.	Number of destinations connected
	Frequency of cycling among users of the network, pre- and post-implementation
Support connectivity and economic growth of regional urban areas of 5,000+ population as well as priority tourist destinations.	Number of urban areas connected pre- and post-implementation
	Number of tourist destinations connected
Propose safe and accessible infrastructure that encourages modal shift and limits interactions with other vehicles.	Make-up of NCN: Percentage off-road, on-road, segregated, shared, etc.
	Percentage of NCN deemed to be fully accessible Demographic breakdown of users on routes focusing on accessibility

# Appendices



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## Appendix A

# Policy and Literature Review

## International Policy

### 2030 Agenda for Sustainable Development

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States including Ireland in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future.

At its core are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries. There is significant alignment between the UN SDGs and the Project Ireland 2040 National Planning Framework National Strategic Outcomes (NSOs), outlined in the National Policy section, below. For example, SDG 11 Sustainable Cities and Communities aligns with NSO1 Compact Growth and NSO4 Sustainable Mobility. Similarly, SDG 13 Climate Action aligns with NSO8 Transition to a Low Carbon and Climate Resilient Society.

The development of the NCN Plan strongly aligns with five SDGs, highlighted in Figure A.1 below, and broadly aligns with numerous others:

- SDG 3. Good health and wellbeing.
- SDG 5. Gender equality (safety is frequently cited as a barrier to cycling by women).
- SDG 10. Reduced inequalities (by providing high-quality linkages for non-car modes between settlements).
- SDG 11. Sustainable cities and communities.
- SDG 13. Climate action.



Figure A.1 : United Nations, Sustainable Development Goals (Source: [www.un.org](http://www.un.org))

## European Policy

### European Union Sustainable and Smart Mobility Strategy (2020)

The European Green Deal (2020) includes a target to reduce transport-related greenhouse gas emissions by 90% by 2050. Central to achieving those targets is the EU Sustainable and Smart Mobility Strategy, which sets the policy agenda for Europe's transition to a green, smart and affordable transport system that aims to change the way people and goods move across the continent and deliver the required 90% reduction.

The Sustainable and Smart Mobility Strategy is structured around three key objectives centered on the European transport system:

- **Sustainable mobility:** involving an irreversible shift to zero-emission mobility by making all transport modes more sustainable, ensuring wide availability of the most sustainable options and giving users incentives to make sustainable choices.
- **Smart mobility:** supporting sustainable choices by taking advantage of digitalisation and automation to achieve seamless, safe and efficient connectivity.
- **Resilient mobility:** bouncing back from the COVID-19 pandemic by creating a Single European Transport Area that is affordable and accessible for all citizens and businesses with resilience against future crises and safety and security challenges.

Implementation of a National Cycle Network is in line with a key element of the Strategy to make alternative sustainable mode choices available, as well as proposals to promote zero-emission mobility and to increase and improve public transport and infrastructure for walking and cycling along the TEN-T network.<sup>1</sup>

## National Policy

### Climate Action Plan 2023

The Climate Action Plan 2023 (CAP23) is the second annual update to Ireland's Climate Action Plan 2019. CAP23 is the first to be prepared under the Climate Action and Low Carbon Development (Amendment) Act 2021, following the introduction of economy-wide carbon budgets and sectoral emissions ceilings. CAP23 implements the carbon budgets and sectoral emissions ceilings and sets a roadmap for taking decisive action to halve Ireland's emissions by 2030 and reach net zero no later than 2050. These targets are a key pillar of the Programme for Government.

Previous Climate Action Plan 2021 targets have been revised to meet this higher level of ambition, including a 20% reduction in total vehicle kilometres, and a 50% increase in daily active travel journeys by 2030.

An Annex to the plan outlines the specific actions to be taken to meet the targets outlined in the plan. Several actions are related to delivering cycling and walking infrastructure and encouraging an increased level of modal shift towards active travel and away from private car use, while Action TR/23/30 specifically calls for the advance rollout of the National Cycle and Greenway Networks. .

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<sup>1</sup> Trans-European Transport Network (TEN-T) [https://transport.ec.europa.eu/transport-themes/infrastructure-and-investment/trans-european-transport-network-ten-t\\_en](https://transport.ec.europa.eu/transport-themes/infrastructure-and-investment/trans-european-transport-network-ten-t_en)



## Project Ireland 2040 National Planning Framework (NPF)

The NPF 2040 document was published in February 2018 and sets out Ireland's planning policy direction for the period up to 2040. The NPF forecasts substantial increase in population across all regions of the country which, along with associated employment and educational use, will lead to a subsequent increase in demand for travel. Within this context, several of the NPF's National Strategic Outcomes (highlighted in the Figure A2) are particularly relevant to the development of the NCN Plan, including:

- **NSO 2:** Enhanced Regional Accessibility.
- **NSO 3:** Strengthened Rural Economies and Communities.
- **NSO 4:** Sustainable Mobility.
- **NSO 8:** Transition to a Low Carbon and Climate Resilient Economy.



Figure A2: Project Ireland 2040 National Strategic Outcomes

The Framework outlines a policy objective to improve accessibility between centres of scale separate from Dublin, with a focus on key routes to a number of larger and regionally distributed centres. The development of the NCN will contribute to this.

Development of the NCN Plan is also consistent with

- **National Policy Objective 27** (Pg. 82): "Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments and integrating physical activity facilities for all age".
- **National Policy Objective 64** (129): "Improve air quality and help prevent people being exposed to unacceptable levels of pollution in our urban and rural areas through integrated land use and spatial planning that supports public transport, walking and cycling as more favourable modes of transport to the private car".

## Project Ireland 2040 National Development Plan 2021-2030

The National Development Plan (NDP) is the most recent infrastructure investment plan adopted by the government. The Plan sets out the investment priorities of the state from 2021 to 2030, supporting the delivery of Project Ireland 2040 through public capital investment over the next nine years while guiding national, regional and local planning and investment decisions in Ireland over the next two decades.

The NDP has been developed with a strong focus on climate action and the environment, with a key aim to catalyse a shift towards accessibility-based mobility systems by encouraging people to adopt more sustainable mobility options, particularly cycling and walking.

The NDP outlines a total public investment of €165 billion over the period 2021-2030. In a step-change in the approach towards funding active travel in Ireland, over the next 10 years, approximately €360 million per annum has been earmarked by the Government for investment in walking and cycling infrastructure in cities, towns and villages across the country, including Greenways.

The NDP references the NCN Plan and highlights its role as a "valuable resource in relation to active travel connectivity around Ireland" (Pg. 84).

## Programme for Government: Our Shared Future (Programme for Government, 2020)

Cycling and walking has been given a high level of prominence and ongoing importance in the October 2020, Programme for Government (PfgG) Statement. Significant funding is earmarked to improve the facilities and functions to enable people to travel by cycle (and foot), ultimately improving people's quality of life, air quality, as well as Ireland's commitments to sustainability and decarbonisation.

The PfgG mandates that every local authority, with assistance from the National Transport Authority (NTA), adopts a high-quality cycling policy, carries out an assessment of their roads network and develops cycle network plans, which will be implemented with the help of a suitably qualified Cycling Officer with clear powers and roles. Development of the NCN Plan took cognisance of the county-level cycle network plans and the need for appropriate interface between networks.

As well as the mandated development of cycle network planning, delivery and positioning of qualified personnel, the PfgG seeks more cycling to schools, widening of cycling incentives for employment (Cycle to Work) and ongoing enhancement of safety through policy and legislation review.

Development of the NCN Plan is therefore consistent with the ambitions outlined in the Programme for Government.

## National Sustainable Mobility Policy (2022)

The National Sustainable Mobility Policy sets out a strategic framework to 2030 for active travel (walking and cycling) and public transport journeys to help Ireland meet its climate obligations. It is accompanied by an action plan to 2025 which contains actions to improve and expand sustainable mobility options across the country by providing safe, green, accessible and efficient alternatives to car journeys. It also includes demand management and behavioural change measures to manage daily travel demand more efficiently and to reduce the journeys taken by private car.

In line with the targets of the Climate Action Plan, the policy aims to deliver at least 500,000 additional daily active travel and public transport journeys by 2030 and a 10% reduction in the number of kilometres driven by emission producing cars.

The overall vision outlined in the Policy is *"to connect people and places with sustainable mobility that is safe, green, accessible and efficient"*. To this end, the policy is guided by three key principles, which are underpinned by ten high-level goals, as summarised in Figure A.3.

The NCN Plan is therefore consistent with the principles of the sustainable mobility policy and in particular, the following goals:

- **Goal 1** - Improve mobility safety.
- **Goal 4** - Expand availability of sustainable mobility in regional and rural areas.
- **Goal 5** - Encourage people to choose sustainable mobility over the private car.
- **Goal 7** - Design infrastructure according to Universal Design Principles and the Hierarchy of Road Users model.

PRINCIPLES	GOALS
Safe and Green Mobility	<ol style="list-style-type: none"> <li>1. Improve mobility safety.</li> <li>2. Decarbonise public transport.</li> <li>3. Expand availability of sustainable mobility in metropolitan areas.</li> <li>4. Expand availability of sustainable mobility in regional and rural areas.</li> <li>5. Encourage people to choose sustainable mobility over the private car.</li> </ol>
People Focused Mobility	<ol style="list-style-type: none"> <li>6. Take a whole of journey approach to mobility, promoting inclusive access for all.</li> <li>7. Design infrastructure according to Universal Design Principles and the Hierarchy of Road Users model.</li> <li>8. Promote sustainable mobility through research and citizen engagement.</li> </ol>
Better Integrated Mobility	<ol style="list-style-type: none"> <li>9. Better integrate land use and transport planning at all levels.</li> <li>10. Promote smart and integrated mobility through innovative technologies and development of appropriate regulation.</li> </ol>

Figure A.3 : National Sustainable Mobility Policy – Principles and Goals

With specific reference to Goal 4, the policy notes that “a strategic national cycle network will be identified, providing key inter-urban links and enabling the continued development and delivery of that network”. Development of the strategic NCN is Core Action 29 in the associated Action Plan.

### National Investment Framework for Transport in Ireland (NIFTI) (2021)

The purpose of NIFTI is to enable the delivery of Project Ireland 2040 by guiding the appropriate investment in Ireland’s roads, active travel and public transport infrastructure. The types of positive outcomes transport investment can deliver in support of this purpose include:

- Supporting the development of a land transport network that delivers a high level of service for everyone.
- Enabling the delivery of National Planning Framework objectives for where people will live and work.
- Increasing Ireland’s economic competitiveness.
- Realising a low-carbon, sustainable transport system in Ireland. (DoT, 2018).
- NIFTI establishes four investment priorities, of which, new projects must align with at least one:
  - Decarbonisation.
  - Protection and Renewal.
  - Mobility of People and Goods in Urban Areas.
  - Enhanced Regional and Rural Connectivity.



Figure A.4 : NIFTI Investment Priorities

The NCN Plan aligns in particular, with the Decarbonisation and Enhanced Regional and Rural Connectivity priorities. These key objectives are supplemented by two principle-based hierarchies which will ensure that the most sustainable solutions are sought; these are the Modal Hierarchy and Intervention Hierarchy as presented in the figure below. The NCN Plan aligns strongly with the modal hierarchy as it aims to facilitate a shift towards active travel modes.

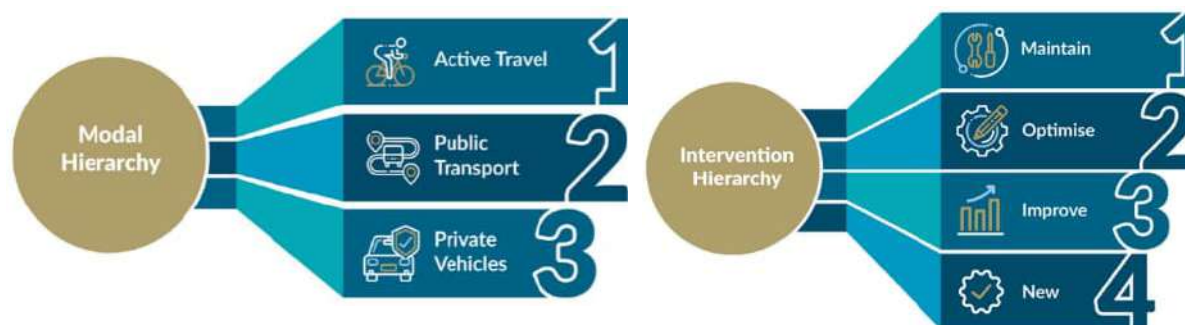


Figure A.5: NIFTI Modal Hierarchy and Intervention Hierarchy

Another key consideration for the NCN as outlined in NIFTI is the need for transport infrastructure to be “accessible by design, so that it accounts for and serves the needs of all members of our society. The United Nations Sustainable Development Goals stress the importance of providing access to safe, affordable, accessible and sustainable transport systems for all by 2030, referencing in particular the needs of women, children, persons with disabilities and older persons”.

### Outdoor Recreational Plan for Public Lands and Waters in Ireland (2017-2021) (Department of Transport, Tourism and Sport, 2016)

The Outdoor Recreational Plan (ORP) sets out a strategy to revolutionise the provision of outdoor recreational facilities and services on public owned land. The plan sets out to deliver world-class outdoor infrastructure and services in Ireland by taking advantage of the potential of resources the state already owns.

Chapter 2.5 of the Plan, “Healthy Ireland”, outlines a framework for improved health and well-being and notes that goals outlined in this framework could be met by increasing the amount of public recreational space available. These goals include:

- Increasing the proportion of people who are healthy at all stages of life.
- Reducing health inequalities.
- Providing opportunities for healthy outdoor recreation, close to people and in all parts of the country.
- Development of the NCN Plan will contribute to achieving these goals by providing increased facilities for active modes.

### Government Road Safety Strategy 2021–2030

The primary aim of the government’s road safety strategy is to reduce the number of deaths and serious injuries on Irish roads by 50% over the next 10 years. For the 2021–2030 strategy, seven Safe System priority intervention areas have been identified, two of which have particular relevance to the NCN:

- **Safe roads and roadsides** - To improve the protective quality of our roads and infrastructure.
- **Safe and healthy modes of travel** - To promote and protect road users engaging in public or active transport.

The Road Safety Strategy will feature three phases of action plans, the first of which will run from 2021-2024 and includes two types of road safety actions: high-impact actions and support actions. Two of the high-impact actions in the Phase 1 Action Plan are:

- “During 2021–2025, construct 1,000 km of segregated walking and cycling facilities to provide safe cycling and walking arrangements for users of all ages”.

- “Develop a National Cycle Network plan for interurban rural cycling and walking, and an implementation plan for delivery in Phases 2 & 3”.

The NCN Plan will therefore play a significant role in supporting the goals of the Strategy.

### Ireland’s 4<sup>th</sup> National Biodiversity Plan (2023-2027)

The 4<sup>th</sup> National Biodiversity Action Plan (NBAP) will set the national biodiversity agenda for the period 2023-2027. The Plan will aim to improve the governance of biodiversity in Ireland so that we can better respond to the biodiversity crisis.

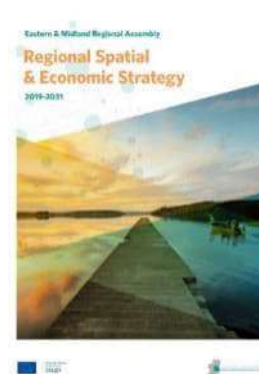
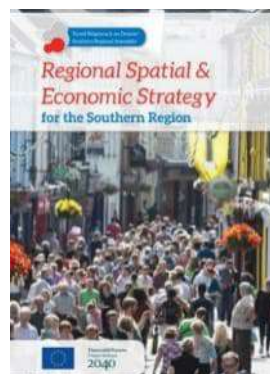
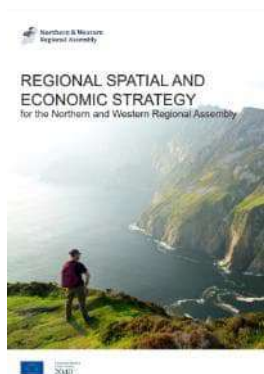
The Plan has been in development since October 2021, with a second draft of the Plan due to be issued for public consultation in the second half of 2022. The final version of the Plan will be published in early 2023.

The 4<sup>th</sup> NBAP is supported by a set of objectives, outcomes, targets, actions, and indicators which are interdependent and set out how Ireland will achieve its vision for biodiversity. These elements of NBAP will be considered in the delivery of the NCN.

## Regional & Local Policy

### Regional Spatial and Economic Strategies

The National Planning Framework outlines a need to manage balanced growth between the regions (The Northern & Western, Southern, and Eastern & Midland Regional Assembly areas). As such, each Regional Assembly has produced a Regional Spatial and Economic Strategy (RSES). These



Strategies have been reviewed to determine the strategic alignment of the NCN Plan in the context of each. While all three RSES documents are distinct and specific to their region, there are common themes of relevance to the NCN running through them, as summarised in the table below.

**Table A.1 : Common Relevant Themes in Regional Spatial and Economic Strategies**

Common Theme	Northern & Western	Southern	Eastern & Midland
Over-reliance on the private Car	This region is highly dependent on the private car for travel to work and education, with approximately 70% of the population having commuted by private car according to the Census 2016, up from 66% in 2011.	There is evidence of an overreliance on the private car for travel to work and education, with approximately 14% of the Region's population travelling to work / education by green modes in 2016 – lower than the state average (17%) (CSO,2016).	Trends within the region indicate that there is an overreliance on the private car for travel to work and education. Approximately 46% of Dublin's population commute by private car while approximately 65% and 69% of the populations of the Eastern and Midland SPAs respectively travel by this mode.
Enhanced Regional Accessibility	Connected Ambition: Accessibility and mobility within the region have a direct effect on the region's economic competitiveness. It also influences the	The RSES recognises the importance of improved intra-regional connectivity between networked settlements – public transport, rail, inter-urban walking and cycling	Regional Strategic Outcome 15: Enhanced Regional Connectivity – Protect and enhance international connectivity and regional accessibility to support economic development, build

Common Theme	Northern & Western	Southern	Eastern & Midland
	attractiveness of the region as a favourable living and visiting environment.	routes, greenways and e-mobility initiative.	economic resilience and support strengthened rural communities and economies including the blue-green economy and tourism.
Sustainable Mobility	Sustainable travel can have significant benefits for individuals, workplaces and educational facilities in terms of health and wellbeing, costs and time associated with travel. It has the potential to reduce congestion and emissions and to exploit investment in sustainable transport.	Transform our transport systems towards well-functioning, sustainable integrated public transport, walking and cycling and electric vehicles.	Investment in sustainable mobility will be delivered through local transport plans (LTPs), to be prepared by local authorities in collaboration with transport agencies.
Low Carbon, Climate Resilient and Sustainable Society	This region is willing to harness development trends, and changes in public policy, where necessary, to demonstrate our ability to be a leader in pursuing a low carbon strategy.	Safeguarding and enhancing our environment through sustainable development, prioritising action on climate change across the Region, driving the transition to a low carbon and climate resilient society.	A key challenge facing the region, along with all other regions, is the transition to a low carbon society. For the RSES this means five primary areas of transition which are at the core of the Strategy. One of these is a transition to sustainable transport systems.
Development of Cycling Facilities	Transport Priority Core Outcome 9: Develop a comprehensive network of safe cycling routes in the three cities / associated metropolitan areas, and providing similar facilities in other towns and villages, where appropriate.	Regional Planning Objective 174: Delivery of cycle routes, Greenway and Blueway corridor projects; Delivery of high-quality safe cycle route network across the Region and cycling environments; Development of a safe cycling infrastructure to cater for the needs of all groups of cyclists, especially new cyclists, school children, elderly etc.	The following walking and cycling objectives will guide investment in the EMRA: Delivery of the National Cycle Plan within the Region inclusive of the Greenway and Blueway projects Provide safe cycling routes in towns and villages across the Region

### Ireland's Cycle Network (NTA, 2022)

The report outlines the plan for CycleConnects, outlining the steps taken in the development of this National Plan which is comprised of 22 individual cycle networks in each respective county. The plan does not prescribe any cycle infrastructure for the routes presented but mainly serves to illustrate the potential cycle connections between all major towns and cities outside the Greater Dublin Area (GDA).

The proposed network plan is comprised of interurban routes that connect settlements of over 1000 people. Existing and proposed greenways / blueways were also included in the network. Any town with a population of over 5000, as per the 2016 Census, has been developed further with a more dense urban cycle network to cater for increased cycle demand.

The development of the NCN included ongoing liaison with the CycleConnects project team to ensure that alignment of proposed interurban connections.

## Greater Dublin Area Cycle Network Plan (2021)

The 2021 GDA Cycle Network Plan provides a substantial update and expansion of the previous 2013 GDA Cycle Network Plan.

Whereas the 2013 GDA Cycle Network Plan focused on identifying the links necessary for providing an adequate network for the cyclists, the 2021 GDA Cycle Network Plan aims to strengthen access and local permeability within Dublin and GDA towns as well as strengthening the cycling connectivity between them.

The 2021 GDA Cycle Network Plan covers the entire Greater Dublin Area and therefore includes proposals for improvements within district centres and county towns throughout Dublin, Meath, Kildare and Wicklow.

The updated plan also outlines a new classification system for cycle routes, which represents a step change towards more tailored cycling environments. The revised classification differentiates between 'utility' movements and 'leisure' movements, acknowledging that different types of cycling facilities are appropriate for different intended uses, although it may sometimes be the case that a single route corridor would be appropriate for both uses.

These proposals and the potential for overlap / interface with the NCN were considered during the NCN Plan development.

## Other Regional City Transport Strategies

The Galway Transport Strategy (GTS) was published in 2016, while the Cork Metropolitan Area Transport Strategy 2040 (CMATS) was published in 2020. A Draft Transport Strategy has been prepared for Limerick (2020), while a draft strategy is currently being prepared for Waterford.

All the regional city transport strategies include proposals for cycle networks. These proposals and the potential for overlap / interface with the NCN will be considered during the implementation phase of the NCN Plan.

## Area-Based Transport Assessments (ABTAs)

The Climate Action Plan notes that "*Outside of the cities, local transport plans for the regional growth centres and key towns will allow for local implementation of national and regional level land use and transport policies. These plans will be prepared based on the Area Based Transport Assessment Guidance produced by the NTA and TII.*"

Work on a number of these ABTAs has already commenced, with more planned in the near future. Where relevant, the NCN Plan takes account of the need for interface between the NCN and any local cycle networks developed as part of the ABTAs.

## County Development Plans and Local Area Plans

The recent trends in national policy towards recognising the role of cycling in facilitating a shift towards sustainable mobility and a low carbon, climate resilient and sustainable society has started to be reflected in recent County Development Plans and Local Area Plans. By way of examples:

- The Kildare County Development Plan 2017-2023 notes that "*The Council recognises the importance of both walking and cycling to the overall well being and quality of life of residents, and that "It is policy of the Council to support green and blueway projects that promote walking and cycling in conjunction with the relevant organisations and bodies".*"
- The Galway County Development Plan 2022-2028 contains a Policy Objective (WC4 – Modern Network of Walking and Cycling Infrastructure) "*To continue to work and engage with the National Transport Authority, the Department of Transport, Tourism, and Sport and other agencies in developing a modern network of walking and cycling infrastructure in the County.*"
- The County Donegal Development Plan 2018-2024 notes that "*It is a policy of the Council to ensure that large scale development proposals provide walking and cycling infrastructure.*"

While this presents examples from a small number of plans, this trend is becoming prevalent across all county and local development plans and, as such, development of the NCN Plan is in line with County and local level policy.

### Five Cities Demand Management Study

The aim of the Five Cities Demand Study is to provide a focused and evidence-based approach to addressing the carbon, congestion and air quality challenges facing the cities of Ireland. It is the result of an 'urgent requirement' to reduce transport-based greenhouse gas emissions. Rather than duplicating or repeating other national or regional strategies that are in place, the Study aims to inform the direction of complementary demand management policy measures at a local and national level. As such, it outlines a number of potential measures aimed at increasing the cycling mode share, as summarised below.

**PP02** (Public Health and Transport) in the strategy discusses the importance of shifting to an active mode of transport from a health perspective. It is predicted that, by 2025, 33% of Irish adults will be obese. The annual cost of treating obesity related diseases is estimated to be €2.1 billion by this time. The document stresses that reducing car dependency and replacing these trips with physical activities can play a role in the overall obesity reduction programme, as well as supporting demand management.

**FM10** (Sustainable Mobility Incentives) in the document hypothesises that a reduction or elimination of VAT on cycles can be a more equitable way of reducing the cost of cycling than the cycle to work scheme. Grants could also be imposed to encourage commuters to make the switch from car to cycle.

School mobility management (**BC03**) plans are also outlined in the document. In 2016 nearly 60% of primary schoolchildren were driven to school in Ireland. Mobility management plans are management tools that bring together behavioural change measures and infrastructure improvements in a coordinated framework, allowing educational centres to implement measures against an agreed plan to reduce demand for and use of private cars.

Development of the NCN Plan is therefore consistent with the goals and recommendations of the Study.

## Cycling Network and Design Standards

### TII Rural Cycleway Design (2022)

The TII Rural Cycleway Design applies to the development and delivery of new or improved rural offline cycleways, including national and regional greenways, which are funded through Transport Infrastructure Ireland (TII) and / or when TII is the Approving Authority, unless otherwise instructed by TII.

The document outlines the principles that should be incorporated when designing rural offline cycleways / greenways in Ireland. These Principles are as follows:

- **Coherence.** Cycleways should have a specific origin and destination.
- **Convenience.** New cycleways should offer more benefits to existing cycleways in terms of safety and attractiveness.
- **Directness.** The average distance a cyclist may travel must be considered. The linking of intermediate attractions and destinations are an important consideration for route design.
- **Safety.** Cycleways must be safe for all users (cyclists and pedestrians).
- **Comfort.** Cycleways should meet national standards of lane-width and gradient. Complex manoeuvres should not be incorporated in the design.
- **Attractiveness.** The route should enhance the natural environment where possible. The whole experience should make cycling an attractive option.
- **Access.** Cycleways should link trip origins and destinations along convenient and affordable routes. Cycle routes should be accessible to all types of cycles.



The document also discusses a variety of existing and disused infrastructures that may be suited to be reused as a cycleway. These include disused railway lines, canal towpaths and riverbanks, and forest trails. Consideration is also given to the use of existing local and unclassified road infrastructure as part of the rural offline cycleway.

Specifications as far as cross-sections in the cycleway, grass verged width, safety barriers, headroom are all discussed in the document. The recommended cycle width can be determined by factors such as the volume of cyclists, room to overtake, and whether the rural offline cycleway will be used by other users (pedestrians) etc.

The standards outlined in the document were considered in the development of the NCN Plan.

### The National Cycle Manual (Update Pending)

The manual aims to provide a standardised procedure for designing a cycling facility in Ireland based on the five main needs of a cyclist:

- Road Safety.
- Coherence.
- Directness.
- Attractiveness.
- Comfort.

It provides criteria to measure Quality of Service (QoS) which can be used to measure the degree that the cyclists' needs are achieved in any particular design. The manual also includes the basic principles of the cycle facilities and the current policies and legislation for cycling.

The principles and standards outlined in the National Cycle Manual were considered in the development of the NCN Plan.

### Strategy for the Future Development of National and Regional Greenways (Department of Transport Tourism and Sport, 2018)

The aim of the Strategy for the Future Development of National and Regional Greenways (2018) is to assist the selection of locations for potential greenways and to ensure these greenways are constructed to an appropriate standard.

The Strategy notes that greenways should have the "potential to deliver an increase of tourism to Ireland and are regularly used by overseas visitors, domestic visitors and locals nearby". As outlined, these greenways should also "link places of interest, recreation and leisure in areas of beautiful scenery of different types with plenty to see and do".

The Strategy outlines factors that should be considered when developing national and regional greenways as well as post-construction considerations such as cleaning and maintenance.

The guidance outlined in the Strategy was considered in the development of the NCN Plan. Consideration was also given to the selection criteria used to identify 'national' and 'regional' routes when determining an approach to network identification and classification for the NCN.

### TII Sustainability Implementation Plan (2021)

TII's Sustainability Implementation Plan outlines their commitment "*to becoming a leader in delivering and operating sustainable transport infrastructure in line with Project Ireland 2040, the Programme for Government, the UN Sustainable Development Goals and the European Green Deal*".

The document establishes core sustainability principles, which are derived from national policy. The NCN Plan aligns with many of these principles, including 'providing effective, efficient and equitable mobility', and 'enabling safe and resilient networks'.

## Academic Literature Review

The academic review was undertaken as part of the process of developing a clear understanding of potential NCN users and their needs. The review included a range of research papers, articles, data sets. A summary of the publications included in the academic review is provided in Table A.2 below.

A more comprehensive discussion of the findings of the review is provided in the sections below, but the main items relevant to the development and implementation of the NCN Plan can be summarised as:

- Commuting by cycle is increasing in popularity but is heavily dependent on where one lives – urban areas (Dublin, in particular) with a shorter distance to work have higher rates of commuting by cycle.
- Recreational cycling is more popular in Ireland than commuting by cycle and has distinct infrastructure preferences compared to commuting (i.e., scenic routes and recreational infrastructure versus directness of route).
- Segregated and / or traffic free cycle infrastructure encourage more trips to be taken by cycle across all cycling confidence levels.
- A large gender disparity exists in cycling participation in Ireland – men are generally twice as likely to cycle – and the provision of safe cycling infrastructure is seen as a key factor to reduce this.

**Table A.2 : Overview of Articles Reviewed for Market Research**

Title	Author(s)	Year of Publication
<b>A Strategy for the Development of Irish Cycling Tourism: Conclusions Report</b>	Sustrans	2007
<b>Bike Life Dublin Metropolitan Area</b>	NTA	2019
<b>Commuting in Ireland</b>	Central Statistics Office	2016
<b>Determining Bicycle Infrastructure Preferences - A Case Study of Dublin</b>	Brick, Caulfield, et al.	2012
<b>Four Types of Cyclists?: Testing a Typology to Better Understanding of Bicycling Behaviour and Potential</b>	Dill et al.	2012
<b>Greenways and Cycle Routes Ancillary Infrastructure</b>	Department of Transport, Tourism and Sport	2018
<b>How Far is too Far to Cycle to Work (Article)</b>	Bicycle 2 Work (bicycle2work.com)	No date given
<b>Irish Sports Monitor: Annual Report</b>	Sport Ireland	2019
<b>Travelling in a Woman's Shoes - Understanding Women's Travel Needs in Ireland to inform the Future of Sustainable Transport Policy and Design</b>	Transport Infrastructure Ireland (TII)	2020

### Current Cycle Patterns and Demographics (Commuters)

Approximately 3% of commuters cycled to work in 2016 (CSO, 2016). Cycling to work has become more popular - increasing in Ireland by 43% between 2011 to 2016.

57,000 people commuted via a cycle in Ireland in 2016, with a further 10,700 cycling to third level institutions. There is likely potential for increased levels of cycle commuting as nearly 75% of people surveyed say they would consider cycling to a new job if 'off road' cycle spaces were available (Caulfield, Brick et. al, 2012).

The likelihood of someone cycling to work is heavily dependent on where a person resides: 38,870 people who cycled to work in Ireland in 2016 (or 67%) lived in Dublin City or its suburbs. This represents 7.6% of Dublin's working population. Only 3% of Cork City's population cycled to work and only 395 people who worked in Waterford City commuted by cycle. In rural towns and areas with a population of less than 10,000 persons, less than 1% of people cycled to work (CSO, 2016).

A survey produced by the NTA found that a quarter of Dublin's population cycles at least once a week, with 11% cycling 5 days or more per week (NTA, 2019). The survey found that there is a growing market for cyclists in Dublin with 21% saying they 'do not cycle but would like to'.

Age plays a role in determining the likelihood of choosing to cycle to work. Those under 40 years old made up 60% of the cycling population while only representing 48% of the workforce. Socio-economic status also influenced cycle patterns. Professional workers made up 9% of the working commuting population, while they accounted for 16% of those cycling to work. Managerial and technical workers accounted for 31% of the working commuters, yet 34% of them are cyclists. Skilled manual workers were underrepresented among cyclists, possibly through the need to commute by van, or to carry tools and equipment.

The distance travelled to work also influences a person's ability or willingness to switch to a cycle commute. In 2016, the average commute was 15km, an increase of 0.3km from 2011. At county level, the longest distances recorded were in Laois and Leitrim at 25km and 23km, respectively. Between 2011 and 2016, there was a rise of 10% of people that commuted 25km or more to work, with 238,241 persons making this journey. According to 'bicycle2work.com', a US based website set up by cycling enthusiasts encouraging cycling to work, 8-16km is a reasonable distance to cycle to work (Bicycle 2 Work, n.d.). A journey to work should take 30-60 minutes for a person of average fitness.

### Current Cycle Patterns (Recreational Cyclists)

Although only 3% of people in Ireland use cycling as their main form of transport (less than the EU average of 14%), 10% cycle regularly (Sport Ireland, 2019). This figure includes recreational cyclists who generally cycle longer distances than commuters. Although greenways for recreational and commuting cyclists can be shared, these two types of cyclists generally have different needs. Recreational cyclists generally prefer scenic routes and recreational infrastructure (picnic areas, resting places, etc.), while commuters value parameters such as 'directness' and journey time.

The inclusion of ancillary infrastructure may entice tourists and other recreational groups to use a greenway (Department of Transport, Tourism and Sport, 2018). Ancillary Infrastructure of a greenway refers to route furniture (rest, shelter, and stores), signage (interpretive and directional), technical supporting information for the route, and pocket facilities (cycle, play, study spaces). Greenways are often constructed to cater for tourists with longer routes and more facilities than a cycleway built specifically for commuting.

### Cycling Confidence and Route Choice

A study conducted by Trinity College Dublin and AECOM (Caulfield, Brick et. al, 2012) investigated the preferences cyclists have in terms of infrastructure. It was discovered that cycling confidence had little bearing on infrastructure preference. The study found that "facilities segregated from traffic" is the preferred form of infrastructure, followed by cycling through residential streets and parks - where no infrastructure was implemented except for sufficient facilities for wayfinding.

The study also asked what would encourage respondents to cycle to work if they hypothetically started a new job within cycling distance. Nearly 75% reported that more off-road cycle tracks would influence them to take a cycle commute. 56% of respondents stated that more connected on-road cycle lanes would encourage them to cycle to work. 69% said that less traffic was unlikely to encourage them to

cycle to work. Signage and improved information available had little influence on encouraging people to cycle to work.

The study found that short journey times and directness were the most important variables for both existing cyclists and non-cyclists in determining route choice. This was followed by infrastructure type (i.e., off-road cycle tracks), number of junctions along the route, traffic speed, and volume of cyclists.

Similar findings were observed in the Bike Life survey undertaken by the NTA and Sustrans, which found that 70% of people would find traffic-free routes away from roads useful to help them cycle more and 69% would find cycle tracks, physically separated from traffic and pedestrians, useful to help them cycle more (NTA, 2019). 84% of residents supported building more physically separated on-road cycle tracks, even when this would mean less space for other road traffic.

A study by Portland State University (Dill et al., 2012) investigated a typology developed for the city of Portland that includes four categories of cyclists: 'strong and the fearless', 'enthused and confident', 'interested but concerned', and 'no way no how'. Adults were placed into these four categories based on answers given to scenarios hypothesised by the surveyors, ranking each on a scale of 1 through 4 (1 being very uncomfortable, 4 being very comfortable). The analysis of the study concluded that reducing traffic speeds and increasing segregation between cyclists and other road users may increase levels of comfort and cycling rates.

## Gender Influence

Men are generally twice as likely to cycle in Ireland compared to women while there is an even greater discrepancy between some age brackets (CSO, 2016). Between the ages of 16-19, 31% of men cycle in comparison to just 11% of women.

One of the reasons for this difference is the lack of 'social safety' on cycleways. 23% of women in the UK feel safe cycling in hours of darkness, compared to 37% of men (SUSTRANS, 2018). This is a problem particularly during the winter period when commuting hours may be in total darkness. The same study found 57% of women stated they feel safe during daylight hours, in comparison with 65% of men.

*Travelling in a Woman's Shoes*, a study commissioned by TII (TII, 2020) explores the factors of car dependency for women that include transport infrastructure, caregiving responsibilities, safety concerns and equality of access to quality services. The study found that 95% and 79% of women outside of Dublin and in Dublin, respectively, consider the car to be a necessity. The study also recognises that the lack of safe cycling infrastructure negates the appeal of health benefits for women. Women feel that, without adequate infrastructure and experience, cycling is a stressful and unappealing proposition, ultimately outweighing any health benefits. Many women interviewed for the study enjoy cycling for leisure on the weekend but do not consider it appropriate for commuting due to a lack of safe cycling infrastructure. In Dublin, 11% of women felt safe cycling compared to 62% who responded that they feel safe walking.

## Appendix B

# International Case Studies

## B.1 Network Planning Case Studies

As part of the development of the NCN Plan, a review was undertaken of international best practices. A detailed assessment of cycle networks currently in place in Denmark, the United Kingdom (UK), and Hungary was completed. These case studies include relevant details regarding the development of cycle infrastructure, implementation, and impact where available, as well as lessons learnt that may be applicable to the NCN Plan.

### Denmark

Denmark was selected as an example of 'best in class' for both cycle culture (cycling accounts for 26% of trips under 5km) and the quality of cycle infrastructure provided, while also being of a comparable geographic size to Ireland.

Two different cycle projects in Denmark are of note in relation to developing the NCN in Ireland: the development of national cycle routes, and the creation of Super Cycle Highways (*Super Cykelstier*).

#### National Cycle Routes

The first ten national cycle routes were established in 1993 with an additional route added in 2002. They are all long routes (each over 200km) crossing the country north-south and east-west, primarily aimed at tourist and recreational cyclists. In more recent years, a number of these routes have been further developed with the aim of increasing cycle tourism.

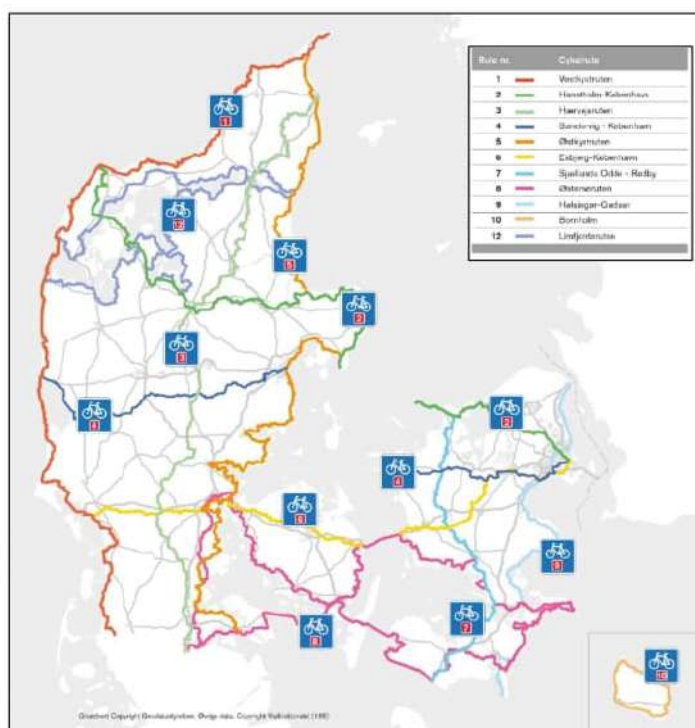


Figure B.1 : National Cycle Routes

In 2008, just over 1 million cycle tourists visited Denmark. In an effort to increase this number and also taking into account the preference for shorter daytrips (at least three out of four cycle-tourists return to their holiday base), a project to further develop national routes 1 and 2 commenced in 2012. The project was completed by public authorities in cooperation with various associations, private business enterprises, and organisations.

The further development of Routes 1 and 2 (the red route running north / south along the west coast and the green route running east / west from Copenhagen respectively) included development of 26 shorter, marked routes in close cooperation with local business enterprises, private landowners and local authorities.

Similar work has now been completed on other national routes. After route signage the focus is on developing services along the route in cooperation with public and private stakeholders, especially to make the longer routes more attractive to cyclists in search of day trips.

This approach, along with various promotional campaigns, appears to have been successful – Denmark welcomed 1.7 million cycle tourists in 2017, an increase of approximately 70% in less than 10 years. These shorter routes are also ideal for local recreational cycling. 39% of cycle trips made within Denmark are for leisure purposes (Cycling Embassy of Denmark, 2018).

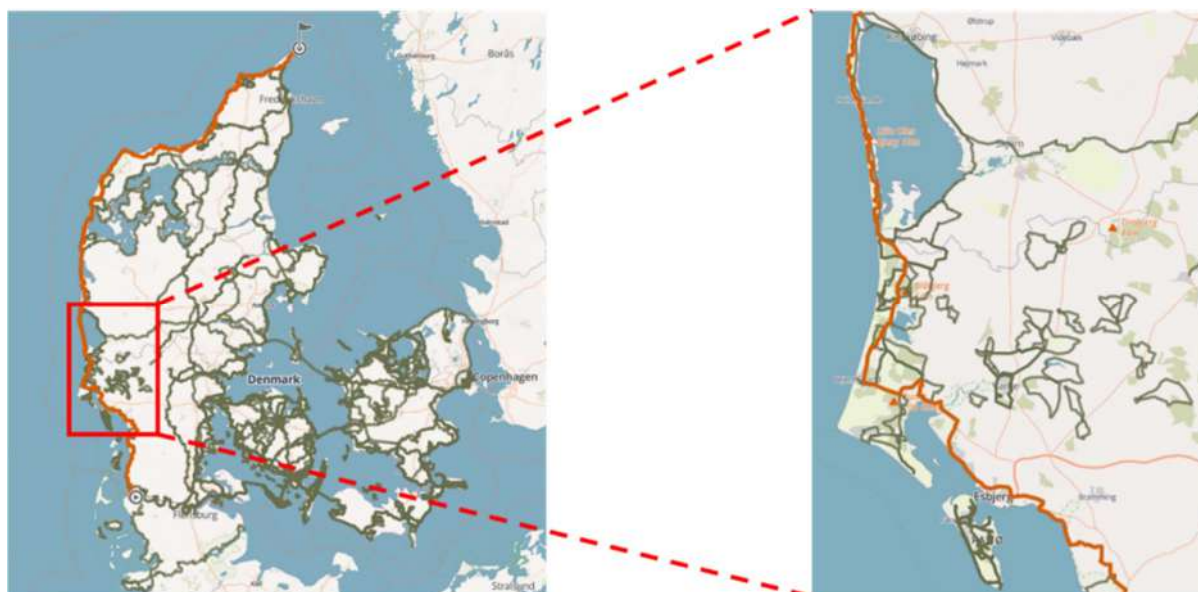


Figure B.2 : National Cycle Route 1 (with zoom in to show shorter local routes and loops)

Cooperation on such projects is a high priority in Denmark and there are several key organisations in this space, including:

- **The Danish Cyclists' Federation** – NGO founded in 1905 to promote cycling and cycling safety with approximately 16,000 members across approximately 40 branches. It has over 20 staff members and is represented on the Cycling Embassy of Denmark, the Municipal Cycling Council, the European Cyclists Federation (ECF), the Danish Road Safety Council, and the Danish Road Safety Commission.
- **The Municipal Cycling Council / Cycling Council** – Professional forum for Danish local authorities to actively promote cycling. Previously published the newsletter *Cykelviden* describing in detail a number of municipal projects in the years 2013-2017. Ensures cooperation across local authorities.
- **The Cycling Embassy of Denmark** – Network established in 2009 to promote cycling as a means of transport and Denmark as a cycling nation. It provides services targeting professional planners in public administrations and private companies, local and national policy makers, students, researchers, and civil society organisations. Members include private consultants, manufacturers, municipalities, public organisations, and non-governmental organisations.
- **Danish Cycling Tourism** – Established in 2014 (after the completion of the above-mentioned projects on national routes 1 and 2) with the purpose of developing and coordinating cycling tourism in Denmark. The association's members are local authorities, destinations, organisations, and private enterprises. Since 2016 Danish Cycling Tourism has been the EuroVelo coordination center in Denmark. The association has four full-time co-workers and a number of affiliated consultants.

### Super Cycle Highways (Super Cykelstier)

Cycling accounts for 26% of trips under 5km and 16% of all trips throughout Denmark (Cycling Embassy of Denmark, 2018). The Super Cycle Highways are primarily aimed at shorter trips and, commuters across the Capital Region in particular.

In 2008, analysis from the City of Copenhagen identified potential for increasing cycle commutes across municipalities in the Capital Region (Cycle Superhighways, 2019). Copenhagen joined forces with 15 municipalities and the Capital Region to form what would become the Cycle Superhighway Collaboration. This was followed by an initial investment of €140 million to develop the cycle highways

by the state. In 2011, the Office for Cycle Superhighways was created to facilitate the collaboration between municipalities for these projects. By 2013, two Cycle Highways had been launched



**Figure B.3 : Super Cycle Highways (Super Cykelstier) Network (as of 2019)**

and the first national cycle highway fund was granted, providing 50% of investment for cycle highways in all of Denmark. Ten cycle highways were built between 2012 and 2020 providing over 167km of routes. A total of 750+km cycle highways are planned to be delivered by 2045.

While route selection and development are collaboratively completed by the various local authorities involved, Super Cycle Highways are clearly defined link types with uniform standards. The routes connect work, study and residential areas, as well as public transport hubs to make cycling more attractive, especially for commuting and for trips of 5-30km. The average length of a cycle highway is 11km but can be up to 30km, with the majority originating from the capital city, Copenhagen.

Super Cycle Highways are more direct and are built with the intention of having as few stops as possible (Secretary of Cycle Superhighways, 2018). The aim of these routes is to establish a competitive alternative to cars and increase the number of cyclists in the region. 60% of cycle commutes on the network are less than 10km.

Super Cycle Highways are designed to be:

- **Accessible** – The Super Cycle Highways should link areas where people work, study and live and provide access to transport hubs. They should be cohesive and easy for commuters to navigate.
- **Direct** – They should provide the user with the fastest route between home, work or education. They should have as few stops as possible and have enough space for cyclists to maintain speed without delays.
- **Comfortable** – The routes should have an even surface, be well-maintained and enhance the cycling experience.
- **Safe** – They should provide the cyclist with safe cycling conditions and reduce the number of fatalities.

A design manual for Super Cycle Highways is available in Danish ([Supercykelstier Koncept-2018-1.pdf](#) ([idekatalogforcykeltrafik.dk](#))). It should be noted that they are not all new cycle tracks, many are upgraded existing routes.

Based on a 2018 study, the Super Cycle Highways are credited with increasing the number of cyclists along the measured corridors by 23% after implementation (C40, 2019). Furthermore, 14% of new cyclists now using the Super Cycle Highway would have previously travelled by car. The same study found health benefits to the value of €616m were attributable to the project and these make up the vast majority of the estimated €765m socio-economic surplus attributable to the highways. This compares



with the estimated cost of €295m for development of the complete network of superhighways (Cycle Superhighways, 2019).



**Figure B.4 : Inner Ring Route C94**

There are plans to further upgrade the network of Super Cycle Highways. A total of 45 cycle highways are expected to be built by 2045 in response to the increasing levels of congestion experienced in Copenhagen, particularly during weekdays (C40, 2019). The capital region of Denmark covers over 2,500km<sup>2</sup> and comprises of 29 individual municipalities. Currently, the cycle highways link 19 of these municipalities. However, with the introduction of the new cycle highways all 29 municipalities will be linked. The network will then total more than 750km. The total cost of building these new routes is projected to cost €295 million (C40, 2019). The new routes are also expected to facilitate 6 million new cycling trips annually and replace 1 million car journeys. 70% of funding of the cycle highways comes from the Government of the Capital Region of Denmark with the remaining 30% coming from the neighbouring municipalities.

### **Lessons Learnt: Use of and Integration with Existing Cycle Infrastructure**

Many parts of the Super Cycle Highway network were based on existing infrastructure which was upgraded. The first step was identifying what infrastructure was already in place, followed by identifying the gaps in infrastructure. These gaps were filled and upgraded to form a complete section of the cycle highway. Possible improvements to an already existing cycle path include intersection / signalling improvements, integrating bus platforms, upgrading lighting, and upgrading signage. Using the existing cycle infrastructure also allowed for deeper integration with other cycle networks providing more access points to the Super Cycle Highways.

### **Lessons Learnt: Integration with Transport Hubs**

Since 2016, Denmark has implemented a 'door-to-door' strategy to allow Danes take their cycles on public transport. In 2019, 30% of all trips taken on trains in Copenhagen featured a cycle ride at one or both ends of the trip (Gehl Architekt, 2019). Many of the Cycle Superhighways were built in coordination with the S-Train Network to give easy access to its stations. These flexible travel options allow users to cycle and take the train home or cycle to another station if they don't want to change trains.

## Lessons Learnt: Route Selection and Design

The 11 National Cycle Routes were designed with the requirements of recreational cyclists in mind. Selection of these routes was aided by tourist and cycling organisations. Different routes have different requirements: For example, it is acceptable to have gravel paths where the route's primary attraction is its scenery, while a route in urban areas should have smooth asphalt paths and focus on safe and accessible crossing of roads. It is recommended that areas with steep climbs should be avoided.

In the case of the Super Cycle Highways, traffic engineers from each individual municipality discussed which routes they wanted to implement in their locality. These were all combined in one map and resulted in cycle superhighways being placed through nearly every municipality. From this, a heat map was created to identify the most popular segments and routes were selected. Site visits were undertaken including a comprehensive analysis of current cycle infrastructure (from YouTube video WEBINAR: Cycle Superhighways, Lessons from Copenhagen (September 2021))

## UK

The UK was selected as a case study based on planned integration with the NCN (with the Northern Ireland network), as well as having similar weather, geography, pre-existing infrastructure, and propensity to cycle.

The UK's National Cycle Network (UK NCN) was established to encourage cycling and walking throughout the UK, as well as promoting cycle touring. Sustrans is the custodian of the network and has aided the project since 1979 when the first traffic-free path was built on a disused railway path (Sustrans, n.d.). Sustrans is a charity with the mission to make it easier for people to walk and cycle.

In 1995, Sustrans was granted £42.5 million from the National Lottery to create a UK wide network of routes for walking and cycling. Stemming from this, in 1996, the UK NCN's goals were revised to increase the number of cyclists in the UK to levels seen in other European Countries such as the Netherlands and Denmark (Hugh McClintock, 2002). A strategy was implemented, focusing on those who didn't cycle rather than those who already did. Many routes on the UK NCN were built prior to the introduction of the first set of UK cycling guidelines in 1996, as up to this point Sustrans had built short lengths of route all over the country and had opened just one long route.

With secured funding and a revised goal, Sustrans now had targeted to provide an additional 4,000km of cycle paths by 2000. Sustrans exceeded its goal by a further 4,000km bringing the total distance of new cycle routes to 8,000km. The network continued to expand and reached a peak of nearly 27,000km in 2018. It comprises shared paths, disused railways, minor roads, canal towpaths and quiet ways in towns, cities, and rural areas throughout the UK.

The UK NCN aims to be safe and traffic-free: it should be 'safe for a sensible 12-year-old travelling alone'. Nine principles are considered when designing routes, which are considered 'key elements that make the Network distinctive'. The UK NCN should:

- Be traffic-free or a quiet-way.
- Where it is not traffic-free it should either be on a quiet-way section of road or be fully separated from the adjacent carriageway.
- Be wide enough to accommodate all users.
- Be designed to minimise maintenance.
- A maintenance plan should be put in place as part of the development process.
- Have a smooth surface that is well drained.
- Be fully accessible to all legitimate users.
- All routes should accommodate a cycle design vehicle of 2.8m long and 1.2m wide.

- Be signed clearly and consistently.
- Feel like a safe place to be.
- Route alignments should avoid creating places that are enclosed or not overlooked.
- Enable all users to crossroads safely and step-free.
- Road crossings should be designed in line with current guidance.
- Be attractive and interesting.

In 2018, Sustrans completed a detailed review of the entire network (Paths for Everyone). This review concluded that vast sections of the network were of 'poor' or 'very poor' standard. It also concluded that much of these sections were not accessible to all legitimate users (see principles above). Based on the findings of this review and further analysis, almost one quarter of the network (approximately 7,000 miles) was reclassified and / or removed from the network. (In Northern Ireland this reduction was even more severe going from a network of approximately 1,000 miles to approximately 150 miles.)

Roughly 5 per cent of the UK NCN, comprising 753 miles on busy roads shared with motor traffic, was removed entirely from the network map and will have signage removed as they "they fall too far short of the quality standards Sustrans aspires to" (MacMichael, 2020). Over 3,000 miles were reclassified to suit 'more experienced' cyclists due to difficulty levels and safety concerns on various routes. These include routes such as the 'Sea to Sea' Route spanning over 140 miles from Whitehaven on the Irish Sea to Tynemouth on the North-East Coast. Other on-road sections remain on the UK NCN map but are listed as "Not on the National Cycle Network". Since the reclassification Sustrans has stated that the UK NCN is now "more accessible and provides a consistent user experience."

Two strategic priorities were identified following on from the 2018 report:

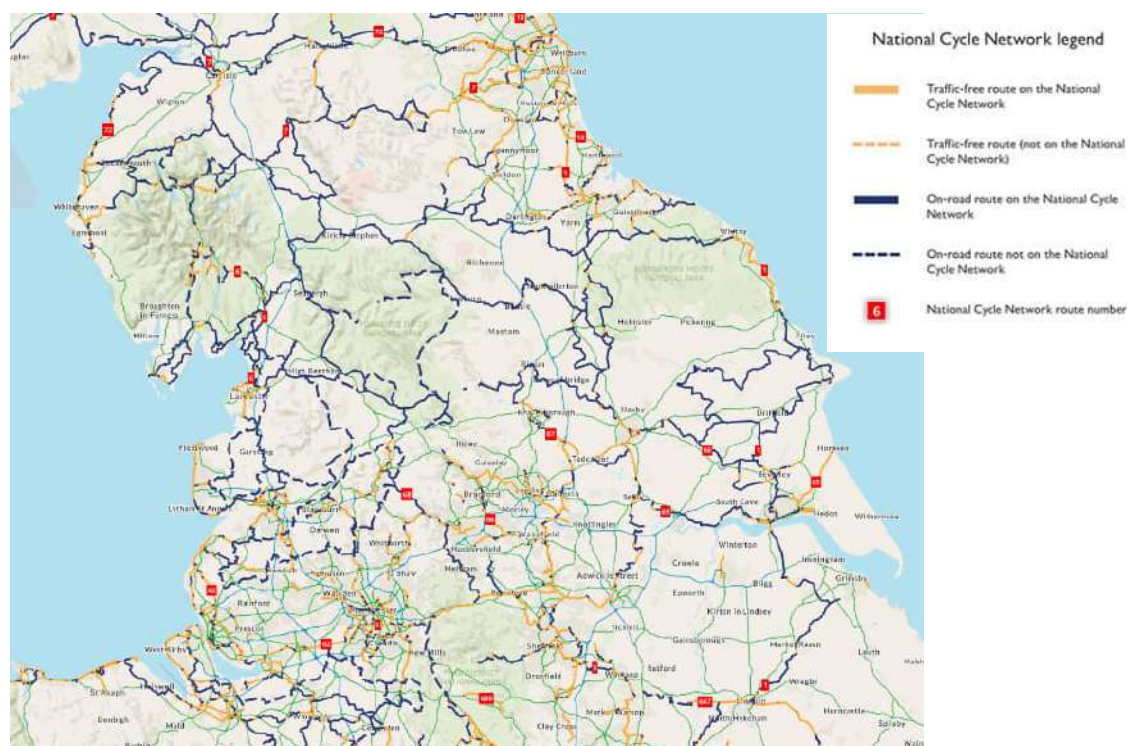
- **Strategic Priority 1** aims to make the UK NCN safer for everyone by making more of the network traffic-free. Where this is not possible, considerations to changing the character of minor roads to quiet-ways should be made. Cycling on major roads also needs attention. The solution here may be to re-route to an off-road section or create new segregated infrastructure.
- **Strategic Priority 2** aims to make the UK NCN accessible for everyone. This includes widening the paths where they are unsuitable for the volume of users, improving path surfaces and improving signage and wayfinding across the Network.

In some cases, where a route was removed but is of importance to tourism and is of a significant distance, the route may be reclassified as a named route. This means that although the route will not be identified as part of the UK NCN or appear on mapping, the entirety of the route will continue to be mapped by Ordnance Survey and continue to be published online. They will also continue to be promoted by Sustrans as a dedicated named route (HiTrans, 2020).

Today, the UK NCN consists of over 20,000km of signed routes. In 2019-2020 it was estimated that 4.2 million individuals used the network reducing the number of car trips in the UK by 70.9 million. Furthermore, Sustrans estimates that £1.6 billion has been brought to local economies and £21.5 million was saved by the NHS through the Network's impact on people's health.

The Sustrans website gives guidelines for designing traffic-free routes and greenways. Specifications around space requirements, geometric design and accessibility to routes are given and have been implemented into traffic-free routes within the UK NCN. These design specifications are in line with the UK's Department of Transport's 'Cycle Infrastructure Design Guidelines' published in July 2020.

Sustrans aims to have all its routes of a 'good' or 'very-good' standard by 2040 with a further 8,000km of traffic-free roads also expected to be built by then. The charity estimates that an investment of £2.8 billion is needed to meet these targets by 2040.



**Figure B.5 : The UK NCN in the North of England**

### Lessons Learnt: Funding

Funding for the UK NCN comes from a variety of sources and varies by geography and year. For example, in 2018 £7 million was granted by the Scottish Government, which was double the previous year, yet there was no grant from the English Government. A large amount of funding also comes from private donors throughout the UK to fuel ongoing projects.

In the year ending 2021, 'charitable activities' raised nearly £63 million for Sustrans (SUSTRANS, 2021). This figure includes £45 million donated from Transport Scotland, £4.6 million from the Department of Transport, £360k from the Coronavirus Job Retention Support, and £154k from other local governments. During the same year £35 million was paid out to various institutions as reimbursement for project delivery. For example, £5.3 million was paid to Glasgow City Council to support 'social distancing schemes' in public places to suppress COVID-19. Fundraisers such as 'The National Cycle Network Challenge', that challenges participants to 'run, walk or cycle' 10, 25 or 100miles also helps raise money for the charity.

### Lessons Learnt: Integration with Local Networks

Although the UK NCN spans the entire length of the county, there is a lack of integration with local networks. For example, the 'Bee Network' (Greater Manchester's cycle Network) has no connections with the greater UK NCN. Local networks often offer a superior connection for commuters to travel from home to work. There are some notable exceptions such as the 'Liverpool Loop Line' on the UK NCN that links with various cycle paths within the Liverpool area. However, this route is advertised as a cycle for leisure purposes and an 'escape from the city'.

### Lessons Learnt: Quality Versus Quantity

As noted above, many of the routes that were previously on the UK NCN were reclassified and / or removed due to being of 'poor' or 'very poor' standard. In July 2020, Sustrans removed a quarter of its roads from the UK NCN as part of an ongoing plan to improve safety standards on the network (Guardian, 2020). In addition, on-road parts of the Network were identified where motor traffic speeds exceeded a

median speed of 40mph, or 35mph in the case of A-roads (where a high volume of traffic could be assumed) (HiTrans, 2020).

In 2020, 80% of the UK NCN in Northern Ireland and 30% in Scotland was reclassified. This was prompted by the 2018 Paths for Everyone report that noted that routes with poor access should be removed from the network. The aim of reclassification was to remove the worst parts of the UK NCN based on road classifications, Sustrans' standards of acceptable levels of traffic volumes and maximum allowed speeds. The construction of these routes in such a short space of time has led to problems down the line with 'poor' and 'very poor' infrastructure being a problem today based on measures of surface, flow, signage, and traffic safety.

The CEO of Sustrans, Xavier Brice, has said that the 'rush for miles' damaged the reputation of the charity and the UK NCN. Sustrans is currently funding 55 'activation projects', in conjunction with landowners to improve missing links, nine of which were completed by July 2020 (the rest aim to be completed in 2023). Activation projects include improving signage on routes, upgrading minor-roads to quiet-ways, improving quality of path surface, and completing gaps in routes and / or adding new routes. These activation projects are estimated to cost £60 million.

### Lessons Learnt: Maintenance

As previously mentioned, the 2018 Sustrans report identified 46% of the Network as 'poor' or 'very-poor'. This was in part due to the lack of ongoing maintenance. Sustrans only owns 1.5% of the UK NCN (the rest being situated on private or state-owned land) and other landowners are not obligated to improve the network. However, plans have been put in place to contact landowners and assist where necessary with the help of the charity's volunteers.

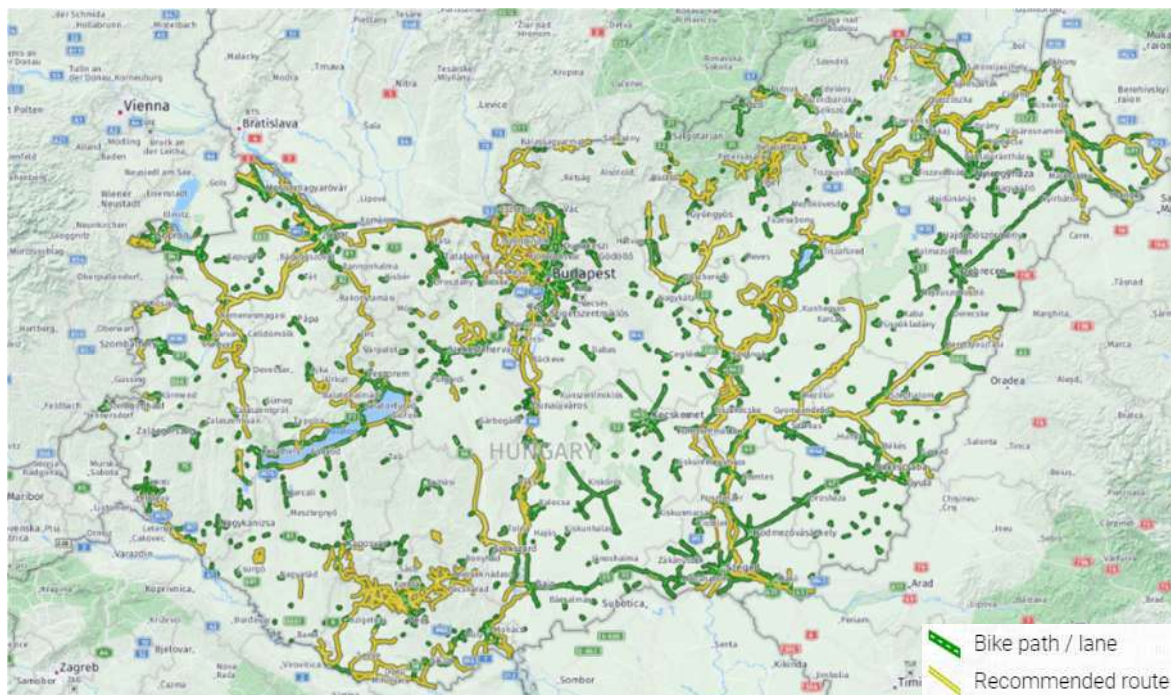


Figure B.6 : Reclassified Routes of the UK NCN in Northern Ireland

## Hungary

Hungary was selected as an example of a network currently in development and being developed at a stage marginally ahead of Ireland.

Hungary's cycle infrastructure was previously developed on an ad hoc basis with isolated developments across the country. Where longer and / or more dense networks exist, they are located primarily around regional hubs and national infrastructure (e.g., forestry trails, agricultural roads and greenways alongside rivers and dams).



**Figure B.7: Map of Current Hungarian Cycle Networks**

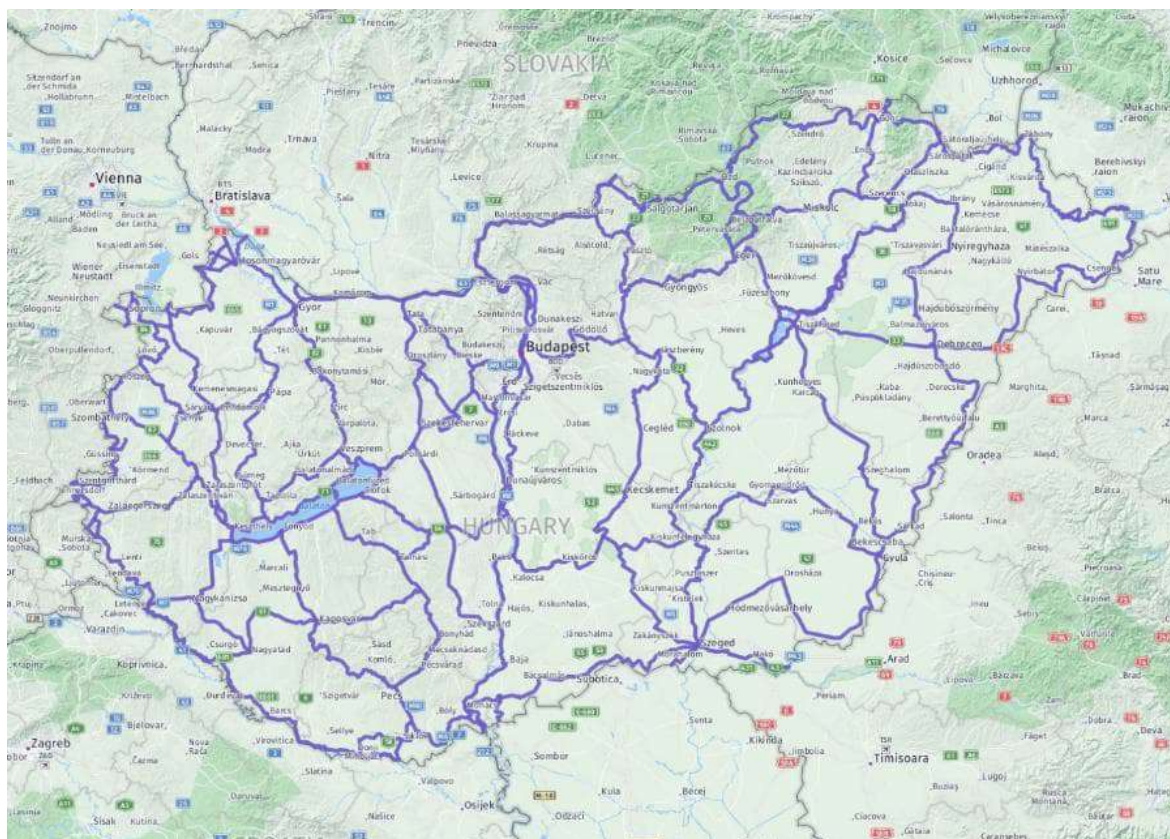
The Cycle Route Network (CRN) aims to provide a coherent network across four specific route types: European, National, Regional and Local. The CRN as a whole aims to serve many users ranging from utility to recreational cyclists, however, each route type focuses on a different target audience:

- European routes are defined by Eurovelo and cater more towards cycle touring and tourist needs.
- National core network focuses on tourist needs.
- Regional networks focus on leisure and commuting needs.
- Local networks focus on commuting needs.

Four EuroVelo routes make up the European routes and are managed by the Hungarian Cycling Tourism Organisation Marketusz (ECF, 2020). These provide cross country routes and connections to neighbouring countries. Regional routes are operated and maintained by the local government, while Local routes are shorter, usually spanning from 5 to 10km, and are also maintained by the local / city government.

Of most relevance to the Irish NCN is Hungary's national core network. This is determined by a spatial planning act of parliament originally introduced in 1996. It is legally binding and can only be modified every 2 years. The proposed National Network is now included in the act. This network is identified at a corridor level – corridors are 25km wide bands within which the final route must adhere. These corridors were determined based on tourist needs at a national level, but also considered recommendations from local municipalities and communities. There is a regular review of the proposed network, but any

segments located outside of the 25km wide band must be incorporated into the planning act during a modification period (once every two years as noted above).



**Figure B.8:** Map of Proposed National Network of CRN

National routes are generally comprised of wide cycle ways, catering for up to 3-4 cyclists to travel in parallel at their widest points along some sections of EuroVelo routes. The national routes span long sections of the country and generally cater towards tourists' needs as previously noted. They must be 2.8m wide and are maintained by the Hungarian Government. Both the European and National routes follow strict guidelines. A budget is also assigned to maintain and upgrade these cycle paths when necessary. Roughly 50% of the CRN is paved and closed from other forms of traffic.

Hungary aims to have a total of 15,000km of cycle network completed by 2030. €136.7 million has been granted by the Hungarian Ministry of Innovation and Technology (ITM) for the construction of 850km of the network (Hungary Today, 2021). The three main upcoming construction projects are the Győr-Budapest section of EuroVelo 6, the Budapest-Lake Balaton route and the Balaton Cycle Ring. The Budapest-Lake Balaton cycle path will span 108km costing roughly €38 million, where nearly every section of path is being constructed in 2021 and 2022 (Daily News Hungary, 2021). There are other investments at a regional level, which are mostly funded by the Hungarian government. These are helping aid over 400 projects currently ongoing to improve local networks. An example of a regional project includes an upgrade to a cycle track around Lake Tisza that involves a development of four bridges in the area (Hungary Today, 2020).

In Hungary, 71% of people said they cycled 'regularly or occasionally' (Pongratz, 2020). Budapest in particular has seen an increase in cycling. Five traffic-counters throughout the city recorded over 2.7 million trips throughout 2020. Although this figure might be somewhat inflated due to the pandemic, this number has steadily increased since the introduction of these counters in 2017 (ECF, 2021). This increase could be attributed to new cycle lanes installed on several traffic arteries within the city, as well as a revamp of the city's cycle sharing scheme, among other factors.

## Lessons Learnt: Legal Framework

As noted above, the Hungary CRN is officially legislated. While this does provide an impetus for progress and completion, it also means that any deviations to the original plan must be sanctioned by a modification which is only allowed every two years.

## Lessons Learnt: Promotion

Active Hungary (a state funded organisation) has been set up to help promote and encourage active travel and the use of Hungary's CRN ([aktivmagyarorszag.hu](http://aktivmagyarorszag.hu)). The Euro Velo website also has a Hungarian section that allows users to find more information on each respective EV route ([eurovelo.hu](http://eurovelo.hu)). Here, an ECF GIS platform fully integrated with the European System has been implemented, allowing for automatic updates if any section of the route changes. An interactive map that shows all the different route types within the Hungarian Cycle Network has also been published ([kozut.hu](http://kozut.hu)). Points of interest and alternative routes can also be displayed. This map has been set up with help from surveys and data from municipalities and local developers.

Recently, a budget has been allocated to promote the cycle network. A YouTube channel, pages on social media and websites (mentioned above) have all been set up. Various Hungarian influencers have been involved in these projects to reach a wider audience.

## Lessons Learnt: Monitoring

The cycle network is constantly being upgraded and improved. Fifty-one automatic counters are set up in Hungary in the countryside alone with more being implemented in urban areas. Manual counting is also conducted annually at 100-150 points throughout the country. The counters help indicate trends and aid in route selection for urban planners. With the help of automatic counters, it was estimated that over 2.75 million cycling trips were undertaken in Budapest in 2020 (Cian Delaney (ECF), 2021).

## Lessons Learnt: Safety Elements

Safety is a concern for the Hungarian NCN as it is aimed to appeal to as many users as possible. Route lighting is obligatory on national, regional, and local cycle spaces in urban areas. Reducing car speeds is considered the most impactful safety element when the cycle paths are integrated with roads. Within the guidelines produced, it was discussed that low traffic roads (roads with less than 500 vehicles per day and with a maximum speed limit of 50kmph) are suited to cycle usage. Roads above this threshold must segregate cyclists from traffic. The width of the cycle lane is important and must be kept over 2.5m.

## B.2 Network Design Case Studies

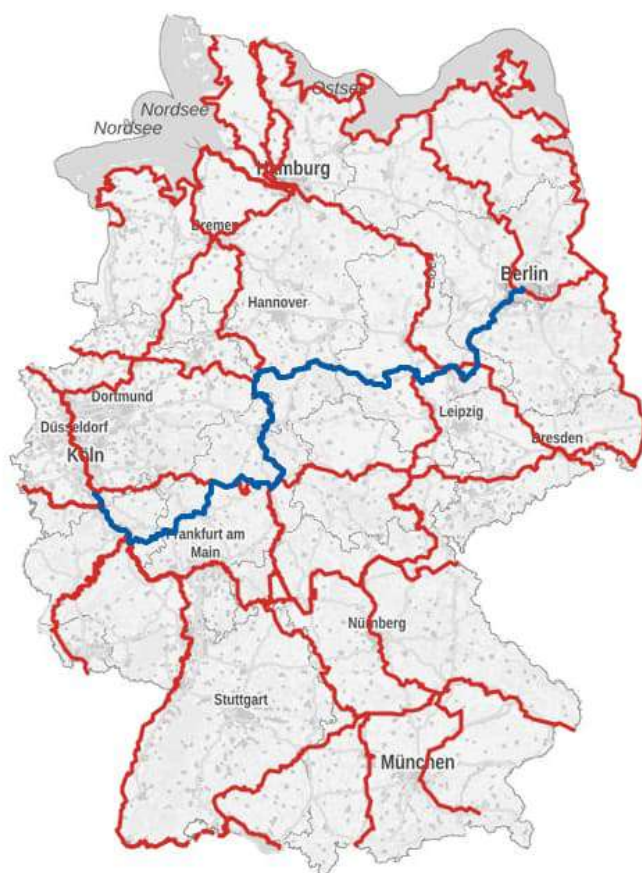
In the development of the NCN Plan, cycle network design guidelines / requirements currently in place in Germany, the United Kingdom (UK), and the Netherlands were reviewed. These case studies include relevant details regarding existing cycle infrastructure and cycle trips, cycle policy, and examples of specific design requirements (focusing on link types), as well as lessons learnt that may be applicable to the NCN Plan.

### Germany

Germany was selected as an example of successfully providing cycle infrastructure at a national level and promoting a modal shift. There are some 72 million cycles and 2.5 million e-cycles in Germany – 30% of households in German cities use cycling as their sole means of transport ([deutschland.de](http://deutschland.de), 2017). Many German cities offer segregated cycle paths and / or ensure safety standards are met on mixed-motor traffic streets. In rural areas, the two types of long-distance cycling routes are *Radnetz Deutschland* (the German Cycling Network) and *Radschnellwegen* (cycle highways).



*Radnetz Deutschland* (the German Cycling Network) comprises of 12 long-distance cycle routes, called D-Routes, and the 'Germany Unity Cycle Route', connecting all regions of Germany (Radnetz Deutschland - the German Cycle Network, 2022). These cycling routes existed prior to being designated as D-Routes over a ten-year period from 2002-2012. The routes are primarily intended for tourism purposes, are well signposted and have the D-Route logo painted at intervals throughout the network. Some of these routes overlap with the EuroVelo network <sup>2</sup>.



**Figure B.9 : Map of D- Routes (Red) and the Germany Unity Cycle Route (Blue)**

*Radschnellwegen* (cycle highways) offer a more direct route to commuters (radschnellwege.nrw, 2022). They are generally part of the cycling network of a municipality connecting important areas such as town centres, industrial estates, and workplaces with residential areas, shopping / cultural centres, and public transportation hubs. By definition, they should be at least 5km long and allow for travel speeds of at least 20km/h. They can consist of a mixture of cycle paths, cycle lanes, and wide cycle streets (designated roads for cyclists in German towns and cities). Many high-speed cycling highways are currently under construction. One showcase project is the RS1 in the Ruhr Region, which will link Duisburg in the west and Hamm in the east (deutschalnd.de, 2017). When completed, the 102km long route is expected to replace 55,000 car journeys a day.

### German National Cycling Plan 3.0

The German National Cycling Plan (NCP) 3.0 is a document published by the German Ministry of Transport and Digital Infrastructure to promote cycling in Germany up to 2030. It includes concepts,

<sup>2</sup> [https://www.radroutenplaner-deutschland.de/veraDNetz\\_EN.asp](https://www.radroutenplaner-deutschland.de/veraDNetz_EN.asp)

focus points and concrete objectives to be used by the Federal Government, federal states, and local authorities.

All actions and objectives of the NCP were collected through dialogues with professional associations, representatives from federal states and local authorities, as well as an online public consultation.

Although the Federal Government is responsible for the construction of cycle paths along federal highways, it is primarily the regional states and local authorities that are responsible for local cycling infrastructure and promoting cycling in local communities.

The NCP has several overarching objectives:

1. Create more seamless cycling infrastructure in Germany
2. Ensure Germany becomes a country of cycling commuters
3. Make cycling at the heart of modern mobility systems
4. Allow cycling to become ubiquitous in urban and rural areas
5. Adopt a 'Vision Zero' for cycling
6. Allow urban cargo transport by bicycle
7. Make Germany a country of cyclists
8. Ensure cycling becomes intelligent, smart, and connected

The NCP dedicates a full chapter to promoting cycling infrastructure. It stresses the importance of creating a 'seamless network of safe paths and roads that can be intuitively and conveniently used' to make cycling the transport mode of choice for people of all ages and abilities. On top of the overarching objectives listed above, the NCP lists several objectives with a 'What's Most Important' section for each to aid Germany in becoming a 'Cycling Nation' by 2030.

**Table B.1 : 2030 Objectives and Most Important Elements for the NCP**

Objectives - By 2030:	What's Most Important
All federal states and districts will have cycling network plans that will be coordinated with each other and with the cities and municipalities, allowing cyclists to reach their destinations conveniently in and outside of cities, on interconnected 'everyday' and tourist routes	Develop and build closed, hierarchical cycling networks
	Plan for vulnerable road users by giving priority to separated and barrier-free cycling infrastructure
	Mix traffic only at low speeds and low motor vehicle density
	In cities: Create space for good cycling infrastructure
Ensure at least 75% of cyclists will feel safe in road traffic. Independent signalling and segregation of cycling from motor traffic will be natural elements of urban cycling networks. Intersections will be intuitively understandable and self-explanatory for all road users and will offer a high level of safety and accessibility for vulnerable road users	Constantly update technical guidance and rules on cycling infrastructure in ordinance with recent developments
	Ensure cycling infrastructure appears uniform nationwide
	Pay attention to future developments and rising populations
	Rapidly redesign inadequate cycling infrastructure by developing a decision support tool for evaluating existing infrastructure
Maintain and service existing infrastructure	

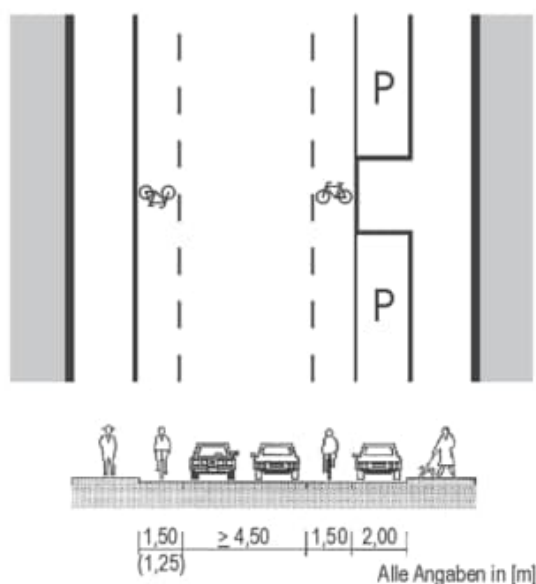


The RASt gives basic considerations when designing for cycle traffic. Firstly, a decision must be made on what type of cycling infrastructure should be installed. Possible design interventions are listed in Table B.2 and described in more detail below.

**Table B.2 : Design Standards of Varying Cycling Infrastructures<sup>4</sup>**

Cycle Route Type	Motor-Speed (km/h)	Direction	Peak hour cycle flow (either one way or two-way depending on cycle route type)	Desirable minimum width* (m)	Absolute minimum at constraints (m)
Mixed-traffic roads	<30km/h	1 or 2 way	<500	N/A	N/A
'Advisory Lanes'	<50km/h	1 or 2 way	500-1000	1.5m	1.25m
Cycle Lane	>50km/h	1 or 2 way	>1000	1.9m	1.5m
Cycle Path	>50km/h	1 way	>1000	2.0m	1.6m
	>50km/h	2 way	>1000	2.5m	2.0m
One-way contra flow	<30km/h	1 way	N/A	1.9m	1.5m

In lower-traffic roads (under 500 vehicles per hour during peak times) and on roads subject to lower speed limits (such as 30km/h zones), cycle traffic can share a road with motorised vehicles. In the RASt, design guidelines are given on advisory lanes, cycle lanes, and cycle paths.



**Figure B.10 : Example of Dimensions of Advisory Lanes (RASt)**

'Advisory lanes' are separated from the main road by broken white lines and can be implemented where mixed traffic on the road is acceptable but for safety reasons (higher speed limits and 500-1,000 vehicles per hour) the cycling traffic needs to be given a dedicated space. 'Advisory lanes' are suited to two-lane roads and may also be installed on single-lane carriageways and on multiple-lane approaches to junctions and within the directional lanes. Motorised vehicles may enter these lanes to overtake. The standard width of the advisory lanes including markings should be 1.5m, with a minimum of 1.25m. The remaining road space for dual carriageways should exceed 4.5m (minimum width of 2.25m per lane for cars). Adjoining parking may also be implemented alongside advisory lanes. A minimum width of 2.0m is required for these 'parking bays'.

'Cycle Lanes' are recommended on roads with a higher speed limit (over 50km/h) and with a higher vehicle usage (usually over 500 vehicles per hour). They are separated from the main road by a lane edge marking, usually 0.25m wide. These lanes should have a colour and / or material differentiation from the main road. It is mandatory for cyclists to use these lanes when they are available. Suitable parameters for the main road are carriageway widths

<sup>4</sup> [https://www.fgsv-verlag.de/pub/media/pdf/200\\_E\\_PDF.v.pdf](https://www.fgsv-verlag.de/pub/media/pdf/200_E_PDF.v.pdf)

up to 6.0m in traffic volumes up to 500 vehicles per hour and carriageway widths of 7.0m in traffic volumes up to 1,000 vehicles per hour to allow for safe overtaking for cars without endangering cyclists.

'Cycle Paths' that run adjacent to roads should be segregated from the main road or parking bays by a separating safety strip. They should be clearly differentiated from the footpath and marked out accordingly through appropriate signage and road markings. They can also be implemented in two-way cycle traffic on one or both sides. Standard widths should be consistent, with widths only being reduced on short stretches, such as restrictions due to built infrastructure. Greater widths may be required on main cycle network routes, in areas of high cycle traffic loads (such as near schools), where cycling traffic is likely to increase at peak times, and on major gradients.

Cycle path	Standard width	Safety clearance
One-way cycle path	2.00 m (1.60 m)*	0.75 m (0.50 m)**) with adjacent carriageway or adjacent to parallel parking; 1.10 m with perpendicular and echelon parking bays***)
Two-way cycle path	2.50 m (2.00 m)*	0.75 m

\*) With low cycle traffic flow  
 \*\*) With no obstructions in the safety clearance strip; figures in brackets for low cycle traffic flow  
 \*\*\*) Overhang strip can be added on

Figure B.11 : Criteria for Cycle Lanes Alongside Roads (RASt)

In some one-way streets, a contra-flow cycle lane may be introduced if motorists have a speed limit of 30km/h, and the motor-traffic lane is a standard width of 3.5m or more (or 3.0m with dedicated passing points on the route). Appropriate signage must also be introduced to signify to drivers that cyclists may pass in the opposite direction. Table B.2 provides a summary of the differing cycle route types and their respective minimum design standards.

## Lessons Learnt

### *Clear Objectives with Flexibility*

The German National Cycling Plan incorporates many aspects other than just infrastructure, but its overall objectives make the purpose of infrastructure design clear and aim to provide guidance to planners / designers when interpreting design standards. Including a 'What's Most Important' component in the National Plan also highlights the 'why' behind each objective.

### *Determining Link Type based on Demand*

Longer inter-urban routes will incorporate varying levels of demand depending on where each section is (e.g., urban, suburban, rural). Defining the link type requirement based on anticipated demand allows a single corridor to include multiple link types, however, where underlying demand is difficult to determine (or potentially suppressed due to poor existing infrastructure) this could result in the development of sub-optimal links.

## United Kingdom

The UK was selected as a case study based on having a similar governance structure with regards to road policy and management, as well as having similar geography and pre-existing cycle infrastructure to Ireland. The UK's cycle infrastructure is made up of national, regional and local networks. While the National Cycle Network is overseen by a single entity, Sustrans, and is relatively comprehensive, consisting of over 20,000km of sign-posted routes across the country, regional and local networks are administered by separate authorities. For example, Transport for London (TfL) oversees the Cycleways network (formerly Cycle Superhighways and Quietways) which are routes that link communities, businesses, and destinations (TfL, 2022). Similar networks are found in many of the major cities throughout the UK and are designated by the local governing body.

While the national government is responsible for overseeing cycle strategies and high-level policies in the UK, most of the responsibilities for implementing cycling infrastructure are at a local level (JEL, 2010). In England, the Department for Transport (DfT) is responsible for cycling policy: It provides guidance to local bodies as well as overseeing the work of its advisory body, Cycling England, which aims to increase active travel throughout the country. In Scotland, Wales, and Northern Ireland the bodies responsible for cycling policy are the Scottish Executive, the Welsh Assembly Government, and the Department for Regional Development, respectively.

In 2020, DfT announced the formation of a new funding body and inspectorate, Active Travel England (ATE), to enforce the standards and time limits, and raise performance generally. The agency is expected to be fully operational in late 2022. Budgets for cycling projects will be controlled ATE, which will be led by a national cycling and walking commissioner. ATE will examine all applications for funding and refuse those not compliant with the new national standards. It will inspect finished schemes and seek the return of funds for any which have not been completed as agreed, or which have not met stipulated timelines. ATE will also inspect, and publish annual reports on highway authorities, grading them on active travel performance and identifying particularly dangerous failings in their networks for cyclists and pedestrians. The Department for Transport's Cycle Infrastructure Design manual and Sustrans' Cycle for Everyone report have been published to support the implementation of cycle infrastructure in the UK. These documents are guidelines rather than minimum standards that must be adhered to and act as a reference point for designers at a local level. In the UK, local authorities are responsible for setting design standards on their roads (DfT, 2020). There is an expectation that local authorities will give due consideration to the guidance produced by these national level documents when designing new cycling schemes and, in particular, when applying for government funding. In terms of the national network, while Sustrans only owns a very small percentage of the network (2%), it does determine the standards for inclusion, improvements and developments.

Over the course of 2020/21, over £220m was provided to local authorities in England through two stages of the Active Travel Fund to reallocate road space and create dedicated routes for cycling and walking, £100m was provided to Transport for London to enable it to deliver the London Roadspace Programme, which has produced over 60 miles of new segregated cycle lanes in the country's capital, and £20m was provided to local authorities to allow them to deliver a wide range of programmes to increase the number of people walking and cycling (Department for Transport, 2021).

## Cycle Infrastructure Design Manual

The *Cycle Infrastructure Design* manual<sup>5</sup> published by DfT in 2020 is a comprehensive document of guidelines that aims to support the delivery of high-quality cycling infrastructure. The document succeeds the *Cycling and Walking Investment Strategy 1* that secured over £1Bn in funding for active travel between 2016 and 2021 (Hawkes, 2021). Inclusive cycling is the underlying theme of the document 'so that people of all ages and abilities are considered'. The manual provides a recommended basis for design standards based on five overarching design principles and 22 summary principles.

This manual provides guidance for local authorities and defines the minimum criteria for funding. Schemes that do not meet these minimum criteria may still apply but require additional justification (DfT, 2020).

To promote the five overarching design principles of coherence, directness, safety, comfort and attractiveness, the manual includes a table that summarises the traffic conditions when protected spaces for cycling (fully kerbed cycle tracks, stepped cycle tracks, and light segregation), marked cycle lanes without physical features, and cycling in mixed traffic are appropriate. For example, a cycle lane with a speed limit of 20mph (approximately 30kph) and a motor flow of 2500pcus (passenger car units) per day is defined as a 'provision suited for most people', whereas a cycle route integrated with traffic

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<sup>5</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/951074/cycle-infrastructure-design-ltn-1-20.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/951074/cycle-infrastructure-design-ltn-1-20.pdf)

(mixed traffic) with a speed limit of 30mph (approximately 50kph) and a motor flow of 3500pcus per day is a 'provision suited for a few people and will exclude most potential users' (DfT, 2020).

Speed Limit <sup>1</sup>	Motor Traffic Flow (pcu/24 hour) <sup>2</sup>	Protected Space for Cycling			Cycle Lane (mandatory/ advisory)	Mixed Traffic
		Fully Kerbed Cycle Track	Stepped Cycle Track	Light Segregation		
20 mph <sup>3</sup>	0	Green	Green	Green	Green	Green
	2000	Green	Green	Green	Green	Green
	4000	Green	Green	Green	Yellow	Yellow
	6000+	Green	Green	Green	Yellow	Yellow
30 mph	0	Green	Green	Green	Yellow	Yellow
	2000	Green	Green	Green	Yellow	Yellow
	4000	Green	Green	Green	Yellow	Yellow
	6000+	Green	Green	Green	Yellow	Yellow
40 mph	Any	Green	Yellow	Yellow	Pink	Pink
50+ mph	Any	Green	Pink	Pink	Pink	Pink

**Legend:**

- Provision suitable for most people
- Provision not suitable for all people and will exclude some potential users and/or have safety concerns
- Provision suitable for few people and will exclude most potential users and/or have safety concerns

**Notes:**

1. If the 85<sup>th</sup> percentile speed is more than 10% above the speed limit the next highest speed limit should be applied
2. The recommended provision assumes that the peak hour motor traffic flow is no more than 10% of the 24 hour flow
3. In rural areas achieving speeds of 20mph may be difficult, and so shared routes with speeds of up to 30mph will be generally acceptable with motor vehicle flows of up to 1,000 pcu per day

Figure B.12 : Appropriate Types of Cycling Infrastructure (the Cycle Infrastructure Design Manual)

The manual's 22 summary principles, listed below, aim to assist in delivering high quality infrastructure based on common best practices and lessons learned. (DfT, 2020)

1. Cycle infrastructure should be accessible to everyone from 8 to 80 and beyond: it should be planned and designed for everyone. The opportunity to cycle in our towns and cities should be universal.
2. Cycles must be treated as vehicles and not as pedestrians. On urban streets, cyclists must be physically separated from pedestrians and should not share space with pedestrians. Where cycle routes cross pavements, a physically segregated track should always be provided. At crossings and junctions, cyclists should not share the space used by pedestrians but should be provided with a separate parallel route.
3. Cyclists must be physically separated and protected from high volume motor traffic, both at junctions and on the stretches of road between them.
4. Side street routes, if closed to through traffic to avoid rat-running, can be an alternative to segregated facilities or closures on main roads – but only if they are truly direct.
5. Cycle infrastructure should be designed for significant numbers of cyclists, and for non-standard cycles. Our aim is that thousands of cyclists a day will use many of these schemes.
6. Consideration of the opportunities to improve provision for cycling will be an expectation of any future local highway schemes funded by Government.

7. Largely cosmetic interventions which bring few or no benefits for cycling or walking will not be funded from any cycling or walking budget.
8. Cycle infrastructure must join together, or join other facilities together by taking a holistic, connected network approach which recognises the importance of nodes, links and areas that are good for cycling.
9. Cycle parking must be included in substantial schemes, particularly in city centres, trip generators and (securely) in areas with flats where people cannot store their bikes at home. Parking should be provided in sufficient amounts at the places where people actually want to go.
10. Schemes must be legible and understandable.
11. Schemes must be clearly and comprehensively signposted and labelled.
12. Major 'iconic' items, such as overbridges must form part of wider, properly thought-through schemes.
13. As important as building a route itself is maintaining it properly afterwards.
14. Surfaces must be hard, smooth, level, durable, permeable and safe in all weathers.
15. Trials can help achieve change and ensure a permanent scheme is right first time. This will avoid spending time, money and effort modifying a scheme that does not perform as anticipated.
16. Access control measures, such as chicane barriers and dismount signs, should not be used.
17. The simplest, cheapest interventions can be the most effective.
18. Cycle routes must flow, feeling direct and logical.
19. Schemes must be easy and comfortable to ride.
20. All designers of cycle schemes must experience the roads as a cyclist.
21. Schemes must be consistent.
22. When to break these principles. In rare cases, where it is unavoidable, provision of a short stretch of inferior infrastructure rather than jettison an entire route which is otherwise good will be appropriate. But in most instances, it is not absolutely unavoidable and exceptions will be rare.

Numerous geometric design guidelines and tables for various cycle infrastructure including amenities and signage are also provided in the manual. The recommendations state that 'designers should aim to provide geometry to enable cyclists to proceed at a comfortable speed, typically around 20mph [30kph]' (DfT, 2020). The manual also discusses different dimensions that are required to accommodate cyclists on a variety of cycles and trailers when travelling at their desired speeds. Desirable minimum widths are given, ranging from 1.5m to 4.0m depending on whether the cycleways are unidirectional or bidirectional, on peak-hour cycle flows, and on cycle infrastructure type.



Table B.3 : Cycle Lane and Track Widths (extract from *Cycle Infrastructure Design* manual)

Cycle Route Type	Direction	Peak hour cycle flow (either one way or two-way depending on cycle route type)	Desirable minimum width* (m)	Absolute minimum at constraints (m)
Protected space for cycling (including light segregation, stepped cycle track, kerbed cycle track)	1 way	<200	2.0	1.5
		200-800	2.2	2.0
		>800	2.5	2.0
	2 way	<300	3.0	2.0
		>300-1000	3.0	2.5
		>1000	4.0	3.0
Cycle lane	1 way	All – cyclists able to use carriageway to overtake	2.0	1.5

\*Based on a saturation flow of 1 cyclist per second per metre of space. For user comfort a lower density is generally desirable.

Table B.4 : Minimum Recommended Horizontal Separation between Carriageway and Cycle Tracks\* (extract from *Cycle Infrastructure Design* manual)

Speed limit (mph)	Desirable minimum horizontal separation (m)	Absolute minimum horizontal separation (m)
30 [approximately 50kph]	0.5	0
40 [approximately 65kph]	1.0	0.5
50 [approximately 80kph]	2.0	1.5
60 [approximately 95kph]	2.5	2.0
70 [approximately 110kph]	3.5	3.0

\*Separation strip should be at least 0.5m alongside kerbside parking and 1.5m where wheelchair access is required.

## Regional Design Manuals

Many regional or local authorities publish their own design standards for application on cycle infrastructure under their authority. A frequently cited and referenced manual is that produced by Transport for London (TfL), the London Cycling Design Standards (LCDS)<sup>6</sup> published in 2019.

The LCDS details guiding principles and detailed design requirements. It does not carry a legal obligation, but 'any decision to depart from its advice should be accompanied by a reasoned justification for doing so' (Transport for London, 2019). It specifies six core design outcomes, similar to those of the *Cycle Infrastructure Design* manual: Safety, Directness, Comfort, Coherence, Attractiveness and Adaptability.

It also specifies 20 guiding principles (also like those of the *Cycle Infrastructure Design* manual):

1. Cycling is now mass transport and must be treated as such.
2. Facilities must be designed for larger numbers of users.
3. Cycles must be treated as vehicles, not as pedestrians.

<sup>6</sup>[https://bicycleinfrastructuremanuals.com/manuals1/London%20Cycling%20Design%20Standards%202016\\_UK%20London.pdf](https://bicycleinfrastructuremanuals.com/manuals1/London%20Cycling%20Design%20Standards%202016_UK%20London.pdf)

4. Cyclists need space separated from volume motor traffic.
5. Where full segregation is not possible, semi-segregation may be the answer.
6. Separation can also be achieved by using lower-traffic streets.
7. Where integration with other road users is necessary, differences of speed, volume and vehicle type should be minimised.
8. Cyclist interventions need not be attempted on every road.
9. Routes must flow.
10. Routes must be intuitively understandable by all users.
11. Provision must be consistent and routes must be planned as a network.
12. Routes and schemes must take account of how users actually behave. If they do not, they will be ignored.
13. Many of the standard tools currently used to manage cyclists' interactions with others do not work.
14. Changes in road space can influence modal choice.
15. Trials can help achieve change.
16. Avoid over-complication and the 'materials trap'.
17. But do not be afraid of capital infrastructure.
18. All designers of cycle schemes must experience the roads on a cycle.
19. As important as building a route itself is maintaining it properly afterwards.
20. Know when to break these principles.

Given that the context of the report is specific to London, its focus is primarily on cycle infrastructure in an urban setting and providing guidance on assessing the Cycling Level of Service (CLoS). A CLoS assessment matrix and a junction assessment tool are provided. Detailed guidance and criteria are provided for cycle lanes and tracks, junctions and crossings, signs and markings, construction and cycle parking some of which are included here.

Area-wide traffic management – on links					– at junctions	
Filtered permeability 	Speed limits 	Speed cameras 	Emphasise place over movement 		Change in priority 	Signalise 
Calming through street design – on links					– at junctions	
Formal / informal crossings 	Streetscape enhancements 	Rebalance priorities 	Objects, eg parking 	Street trees/planting 	Street art 	Change in materials/colour 
Centre line removal 	Apparent lane narrowing 	Median strip 	Modal filter with cycle bypass 	Lane deflection / chicane 	Tighten geometry 	Implied roundabout 
Physical traffic calming – on links					– at junctions	
Sinusoidal speed humps 	Raised table (sinusoidal profile) 	Cushions (cycle-friendly gaps) 	Footway build-outs 		Entry treatment 	Raised table (sinusoidal) 

Figure B.13 : Traffic Calming Techniques (extract from LCDS)

<b>Use and activity</b>	Crossing points 	Pathside activity 	Mixing uses 	Path art 	
<b>Visual techniques</b>	Street trees / planting 	Apparent narrowing 	Apparent table 	Coloured surfacing 	Removal of markings 
<b>Horizontal calming</b>	Tighten geometry 	Deflection 	Narrow rideable width 	Objects, eg cycle parking 	Chicane with gate 
<b>Vertical calming</b>	Sinusoidal speed humps 	P2W speed deterrent humps 	Rumble strips 	Positive texture 	
<b>Enforcement / management</b>	Signs 	Speed limits 	Non-rideable closure to cyclists 		

Figure B.14 : Cycle Calming Techniques (extract from LCDS)

## National Cycle Network Design Principles

Sustrans have published design principles for the National Cycle Network, however, they are relatively high level and do not provide specific criteria other than 'be designed in accordance with current best practice design guidance' (Sustrans, n.d.). Nine design principles are listed:

1. Be traffic-free or a quiet-way.
2. Be wide enough to comfortably accommodate all users.
3. Be designed to minimise maintenance.
4. Be signed clearly and consistently.
5. Have a smooth surface that is well drained.
6. Be fully accessible to all legitimate users.
7. Feel like a safe place to be.
8. Enable all users to crossroads safely and step-free.
9. Be attractive and interesting.

Sustrans does provide guidance on design for two specific link types: low traffic neighbourhoods as well as traffic-free routes and greenways.

The Introductory Design Guide to low traffic neighbourhoods does not include criteria or any geometric guidelines, but rather details the design approach and desired outcomes. It highlights the need for significant community engagement in the design process (Sustrans, n.d.).

The Traffic-free Routes and Greenways Design Guide is more detailed and does provide geometric design recommendations; in particular for widths, horizontal separation from carriageway, horizontal and vertical alignment, and visibility (Sustrans, n.d.).

## Accessibility

Although the design and implementation of cycling infrastructure is addressed by local authorities, Sustrans have published guidelines to promote safe and accessible cycling infrastructure which can be accessed online<sup>7</sup>. One of these is the self-published *Cycling for Everyone Report* that takes inspiration from the *Equality ACT 2010* placing 'a duty upon the public sector to protect people from discrimination in wider society' (Sustrans, 2020).

To make cycling more accessible for all people and different cycle types, Sustrans recommends several actions that can be taken to design new and adjust existing cycle infrastructure. Firstly, removing or adjusting barriers on existing cycle infrastructure including gates, access barriers, and steps should be a priority. This includes widening existing routes and designing routes to provide adequate turning space for all cycles. Another action includes ensuring inclusive cycle design infrastructures are set and followed. Sustrans advocate for inclusive design standards developed as part of a wider set of cycling infrastructure standards. This includes improving the consistency of routes (colour, signage, surface materials, etc.) and giving priority to cyclists and pedestrians at junctions. Sustrans recommends introducing continuing professional development (CPD) training for engineers on inclusive cycling including experiential training where transport professionals meet a whole range of users to other perspectives and try-out adoptive cycles. Finally, Sustrans recommends prioritising cycling infrastructure where public transport is poor.

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<sup>7</sup> Walking and cycling infrastructure design guidance - Sustrans.org.uk, <https://www.sustrans.org.uk/for-professionals/infrastructure/walking-and-cycling-infrastructure-design-guidance>

## Lessons Learnt

### *Fragmented Standards*

Allowing each authority to determine their own set of design standards provides the opportunity for quick iteration and flexibility at the local level but has also resulted in a significant duplication of effort with design standards appearing to be very similar. It also means that standards for cross-boundary projects (such as the National Cycle Network) are harder to implement consistently.

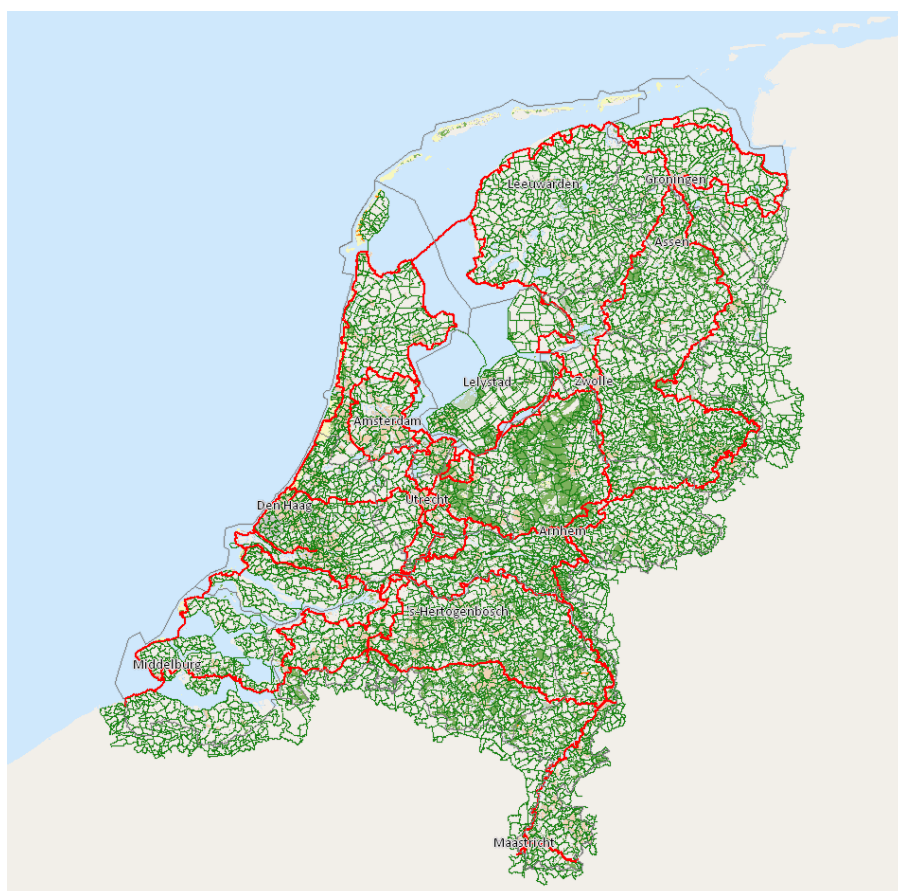
### *Design and Summary Principles*

The Design Principles of the Cycle Infrastructure Design Manual provide a purpose or desired outcome while the Summary Principles (or Guiding Principles of the London Cycling Design Standards) provide suggestions on how the outcomes might be achieved. Both are important to include as guidance to designers / planners as part of the design process.

## Netherlands

The Netherlands was selected as an example of ‘best in class’ for both cycle culture, the quality of cycle infrastructure and providing international leadership in cycle design standards. The Netherlands is widely regarded as the world’s most successful cycle nation with over 35,000km of segregated cycle lanes (Dutch Cycling Embassy, 2021). Over one quarter (28%) of all journeys are made by cycling, covering over 17.6 billion kilometres per annum. Cycling in the Netherlands is also considered to be very safe, with less than one fatality per 100 million kilometres cycled.

The L-F Routes in the Netherlands make up the *Nederlands Fietsnetwerk* (national cycle routes). They are long distance cycling routes that form a network in the Netherlands and Flanders region in Belgium (Holland Cycling Routes, 2022). As of January 2021, they consist of over 3,300km and are generally intended for recreational multi-day cycle tours or cycling holidays. Most L-F routes are signposted in two directions, letters ‘a’ and ‘b’ being used for either direction.



**Figure B.15 : The Dutch Cycle Network (L-F Routes shown in red and local / regional routes shown in green)**

Utrecht is an example of a cycle-friendly city in the Netherlands where over 125,000 cyclists travel into the city each day for work (47% of total commuters) (Gemeente Utrecht, 2019). These come from many of Utrecht’s suburbs such as Hoeten, which alone includes 129km of cycle paths (ITDP Europe, 2019). The link from Hoeten to Utrecht (10 kilometres) is entirely segregated, allowing commuters to travel to work safely and efficiently. Many Dutch towns and cities (including Utrecht) have a ‘soft’ green core that is only accessible to cyclists and pedestrians. Therefore, drivers who want to navigate the town may have to take a lengthy detour via a ring road while cyclists can pass directly through the town centre.

Cycling routes in rural areas are similar to those in the city: Cycle paths (segregated cycling infrastructure) are built where possible and cycle lanes (non-segregated) are also available to use. Highways and “provincial roads” (main roads where the province is responsible for maintenance), are usually fitted with segregated cycle paths.

As previously mentioned, 35,000km of the country's cycling infrastructure has been physically segregated from motor traffic (CROW, 2012). On roads and streets where the speed limit is low, cycles share the road with motorists. The surface quality of these cycle paths tends to be good, and the routing is generally direct with gentle turns making it possible to cycle at consistent speeds for considerable distances.

## Cycle Policies

The Netherlands has a history of research on effective policies for promoting cycling tracing back to the 1970s. In the Netherlands (like many European countries) cycle usage increased until the 1950s when car ownership became more accessible. In 1975 the *Fietserbond* (Dutch Cyclists' Union) came into existence in response to the oil crisis in 1973 and the high number of road accidents involving young children at the same time. By the 1990s the central government had initiated many projects outlined in the *Masterplan Fiets* (Cycle Masterplan). New concepts such as shared-spaces, cycle-streets, and cycle-highways were introduced in this plan and implemented in cities and towns throughout the Netherlands.

CROW is the center for cycle policy for the Dutch Government. The objective of CROW is to develop, disseminate, and exchange practical knowledge to create cycling policy (About CROW, n.d.). The Design Manual for Bicycle Traffic (DMBT) produced by CROW has been influential in creating cycle policies in the Netherlands. Many countries in Europe have taken inspiration from the DMBT to create their own cycle policies. It is perceived to be the gold standard in bicycle design infrastructure manuals (Liu, 2021).

Cycling is heavily encouraged by the national government. Mileage of up to €0.19 per kilometer can be granted and claimed tax-free (government.nl, 2020). This works in much the same way that someone driving their own car for business purposes can claim back a fixed sum related to the distance travelled.

The Dutch invest €487 million annually (as of 2010) in new cycling schemes, cycling research projects, and cycling infrastructure (A View from the Cycle Path, 2010). National government grants account for 40% of the investment in cycle infrastructure, with regional governments providing the rest.

## The Design Manual for Cycle Traffic (CROW)

CROW is a non-profit organisation that specialises in road and highway design within the Netherlands and provides support on regulations at a national level (CROW, 2021). The group advises the Directorate-General for Public Works and Water Management (DGPWWM) (formerly Minister of Transport and Water Management), which conducts a role as the practical execution of public works and water management. The DGPWWM is committed to improving quality of life, access and mobility in a clean, safe and sustainable environment. The Design Manual for Cycle Traffic (DMBT) contains all relevant aspects for creating and maintaining effective cycling infrastructure. The manual is a set of guidelines, considered best practice. Nearly all cycle laws in the Netherlands relate back to this document.

The DMBT encourages designers to heed four recommendations at each stage of the design process:

- Put yourself in the shoes of the cyclist as future user of the design, also taking into account vulnerable groups of cyclists, such as children and the elderly.
- Ensure that facilities fulfil the policy objectives so that they support the policy.
- Devote attention to the (spatial planning) integration of cycle facilities in the surrounding area.
- See to it that the function, design and use of infrastructure are in equilibrium.

It also documents its fundamental principles and outlines five main requirements that cycle-friendly infrastructure must satisfy:

1. Cohesion – The cycle infrastructure forms a cohesive whole and link all origins and destinations that cyclists may have.

1. Directness – The cycle infrastructure always offers the cyclist as direct a route as possible (detours kept to a minimum).
2. Safety – The cycle infrastructure guarantees the road safety and health (minimum exposure to harmful substances) of cyclists and other road users.
3. Comfort – The cycle infrastructure ensures that cyclists experience minimal nuisance (vibrations, extra exertion due to height differences, trouble from other traffic) and delay (stops).
4. Attractiveness – The cycle infrastructure has been designed and fitted in with its surroundings in such a way that it is appealing or attractive.

The DMBT also includes specific requirements for various cycle infrastructure types. When deciding between implementing cycle lanes and cycle paths it is necessary to consider the safety, exposure to emissions, and available space. CROW takes inspiration from research conducted in the 1980s that concluded that 50% fewer accidents involving injury occurred on segregated cycling infrastructure in comparison with cycle lanes. Exposure to air pollution is a valid reason for choosing a cycle path over a cycle lane, particularly if the cycle path is several meters away from the main road. If less than 11.80m is available for cyclists and motor-vehicles on a dual-carriageway then it would not be possible to implement two one-way cycle lanes correctly.

Dutch law only references one type of cycle lane (on-road cycling infrastructure), separated from the main road with either a broken / dashed line or continuous white line. Where the cycle lane is separated by a broken line motorists may use the cycle lane if absolutely necessary. This means motorists can enter the cycle lane to overtake another vehicle, make way for on-coming traffic, reach a parking bay, or drive down a side street. Driving on a cycle lane where there is a continuous white line is prohibited. In this case, lanes for motor traffic must be wide enough to make it possible for motorists to stay in their own lanes. A cycle lane is only legally a cycle lane when there are bike symbols on the lane. The recommended cycle width is based on the fundamental principle that two cyclists should be able to cycle abreast, either for companionship or for the purposes of overtaking. There should be a minimum gap of 0.5m between cycle lanes and the main road.

Where there is enough space, larger roads are fitted with a parallel *fietspad* (cycle track / path). These cycle tracks are separated from motorist and pedestrians by a physical means for example by a paved or unpaved verge, a raised curve or another barrier. The minimum width for cycle tracks is 2m, although, they may narrow to 1.5m at certain intersections. Standard widths are generally 2.5m for one-way tracks and 4m for bi-directional cycle tracks. Mopeds are obliged to use cycle tracks when their maximum speed is no more than 25km/h (these are distinguishable with a yellow licence plate).

Some cycle tracks do not follow or run alongside a road and exist to support cyclists with a more direct route to common destinations such as town centres. This complete separation of modes is called the 'unravelling / unbundling of modes' and is an important feature of Dutch urban design and traffic management. A lot of roads for motorised traffic have been diverted to go around residential areas especially in the last 10 to 20 years in the Netherlands (Bicycle Dutch, 2012). Municipalities used the opportunity these diversions gave them, to downgrade the original routes to make them fast routes for cyclists. Because traffic is unbundled there are fewer places where different types of traffic have to react, leading to a reduced need for crossings and adding to the overall level of safety.

'Grey roads' are a type of cycle lane also included in the *Design Manual for Bicycle Traffic*. These types of cycling infrastructure are more suited in built-up areas that are too narrow for cycle paths and accommodate a considerable amount of motor-traffic (unspecified). They are essentially cycle lanes without the space for a 0.5m separator between the main road and the cycle lane. Grey roads are generally not recommended as in many situations motor vehicles will have to veer onto the cycle lane due to an oncoming bus or lorry, and cyclists may have to use the driving lane to overtake slower cycles such as cargo bikes.

*Fietssnelwegen* (cycle highways) and *Fietsroute+* (intercity routes) have extra features making them more suited to long distance commutes and intercity cycling, such as level and straight stretches,



absence of traffic lights, level crossings with motorised traffic, and superior pavement quality. These routes are clearly signposted making them easily distinguishable from other cycleways. Cycling interest groups and national and local governments advocate these routes as being a solution for the further reduction of vehicular congestion as cyclists can achieve higher average speeds and maintain them. CROW recommends that cycle highways consist of bi-direction cycle tracks, with the minimum of each uni-directional way being at least 2m wide.

*Fietsstraats* (cycle streets) are roads where cycles are the primary and preferred choice of transport and where cars and motorised vehicles are allowed as 'guests' (Bicycle Dutch, 2022). There are 4 types of *fietsstraat*, but they are all required to have a speed limit of 30km/h or less and are usually coloured the same red asphalt as cycle paths. These streets generally exist in areas where low-road traffic is expected. *Fietsstraats* are generally recommended where the volume of cycles is expected to be more than motor vehicles. According to CROW, a road section should only be deemed a *fietsstraat* if at least 1,000 cycles pass through it in a 24-hour period. On bicycle streets, motor vehicles should be limited to 500 units per 24-hour period.

A summary of the standards of the different cycling infrastructures is given in Table B5<sup>8</sup>.

The CROW design manual also recommends that the ratio of the volume of motor vehicles to the volume of bicycles (both per hour) is considered when designing a road. Figure B16 suggests whether to segregate cycle traffic from motor vehicles, either a cycle highway or cycle path / track, or mix traffic, either through a cycle lane ('spacious profile') or bicycle street, based on the volumes of cycle traffic and motor traffic per hour. A 'tight profile' is where a motor vehicle must stay behind a cycle when faced with oncoming traffic and usually takes the form of a bicycle street.

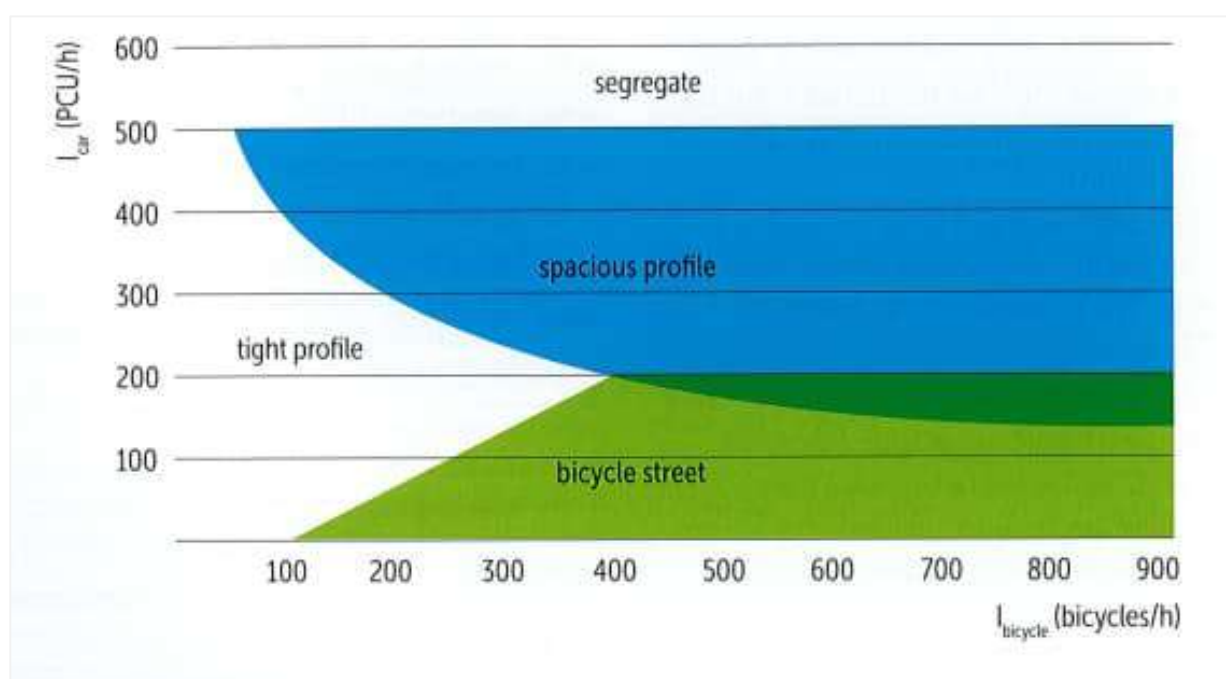


Figure B.16 : Suggested Solutions for Profile Choice when Mixing Motorised Traffic and Bicycle Traffic (CROW)

<sup>8</sup> CROW – Design Manual for Bicycle Traffic

Table B.5 : Recommended Standards for Varying Types of Cycling Infrastructure (CROW)

Cycle Route Type	Segregated from main road?	Direction	Markings / Barriers	Desirable minimum width (m)	Absolute minimum at constraints (m)	Speed Limit for motorists	Vehicles permitted
Cycle Lane	No	1-way	Broken white line	2.3m	1.5m	Unspecified	Cycles, motorists only if necessary
	No	1-way	Continuous white line	2.3m	1.5m	Unspecified	Cycles only
Cycle Path/Track	Yes	1-way	Paved / unpaved verge or raised curve	2.5m	1.5m	N/A	Cycles, mopeds <25km/h
	Yes	2-way	Paved / unpaved verge or raised curve	4.0m	3.0m	N/A	Cycles, mopeds <25km/h
Cycle Highway	Yes (doesn't follow a road)	2-way	Unspecified	2.5m	2.0m	N/A	Cycles only
Bicycle Streets	No	1-way	Usually, a broken white line and coloured red	2.9m	1.5m	30km/h	Cycles, motor-vehicles

## Lessons Learnt

### *Green Cores and Unbundled Modes*

Limiting access to urban cores to pedestrians and cyclists provides an additional incentive to make trips via cycle – as well as separating modes. While this may only be feasible in larger urban centres in Ireland, the idea of providing direct connections to cyclists rather than tracking more circuitous routes built for cars could be applied in many urban and suburban areas. In particular, town bypasses could provide opportunities to allow cyclists a more direct route into town centres when approaching from an inter-urban route (e.g., the NCN) rather than following new bypass roads that route around the town centre.

### *Cyclists' Point of View*

The explicit focus of designing from a cyclist's point of view – including vulnerable groups of cyclists – highlights that the ultimate goal is to have more people using the infrastructure and making trips by cycle. It is important not to lose this perspective at any stage of the design process.

## Appendix C

# Public and Stakeholder Feedback

## C.1 Written Submissions

Thirty-seven written submissions were received from interested parties and individuals. These submissions are documented in Table C.1. The main recommendations are summarised below – based on the same categories used to analyse the online feedback survey (Corridor Selection, Safety and Amenities and Accessibility).

Table C.1 : Written Submissions Received during Public Consultation

Organisation / Individual			
Bolt Ireland	East Mayo Greenway Group	Limerick City and County Council	Steven Matthews, TD
Cara Sport Inclusion Ireland	EirGrid	Limerick branch of the Green Party	Sustrans Northern Ireland
Cavan County Council	Smugglers Cycling Club	Longford County Council	TIER Mobility UK & Ireland
Celbridge Cycling Campaign	ISCycle Project Team, University of Limerick	Donegal County Council	Tipperary County Council
Connemara Greenway Action Group	Galway Cycling Campaign	Mid West National Road Design Office	Waterways Ireland
Cork Transport and Mobility Forum	Galway Cycling Solutions	Navan Cycling Initiative	Wexford Bicycle User Group
Cyclist.ie	Irish Central Border Area Network (ICBAN)	Retail Grocery Dairy & Allied Trades Association (RGDATA)	Wheels of Athenry
Denis Naughten, TD	Galway City Council	Sligo Cycling Campaign	Meath County Council
James Atkinson	Fáilte Ireland	Dublin Port Company	Laois County Council
Sport Ireland			

## C.2 Corridor Selection

Many of the submissions included recommendations to extend the network to additional settlements or key destinations. Most of these did not meet the criteria for inclusion on the NCN or were deemed better served by alternative cycle network infrastructure (e.g., greenway, county cycle network). See Appendix E for a detailed analysis of recommendations received regarding the corridor selection.

## C.3 Safety

Ten of the written submissions expressed safety concerns over the infrastructure requirements of the NCN plan. The majority of these comments regarded the need for segregated cycle lanes. Many submissions argued that high traffic volume and speed on adjacent roads would create unsafe environments for cyclists if using unsegregated cycle infrastructure, potentially leading to a reduced usage of the NCN. Additionally, to ensure safe access to the NCN throughout the day and across different seasons, a number of submissions mentioned the importance of adequate lighting along the route. These submissions also stressed that a lack of lighting may prevent certain demographic groups, such as women and children, from comfortably cycling during darker periods of the day / year. Other submissions highlighted a lack of safe cycle infrastructure in rural areas and cyclist safety at major roundabouts.

## C.4 Amenities and Accessibility

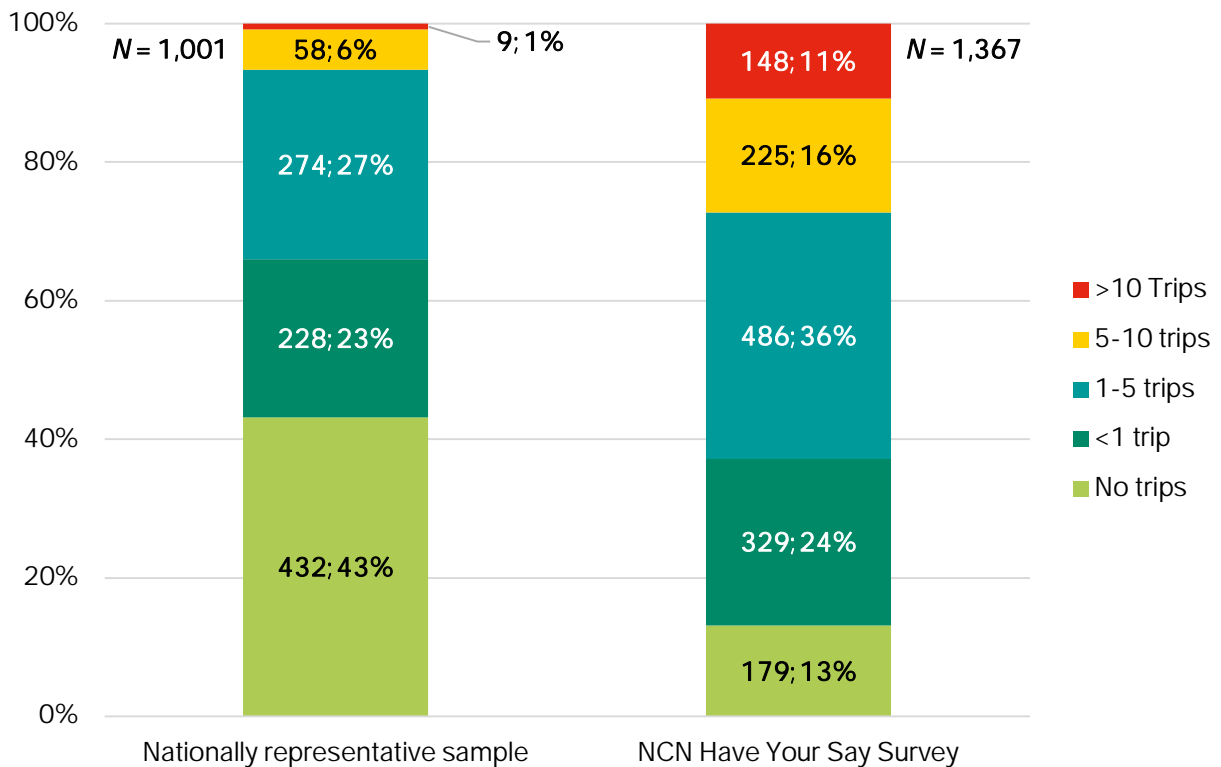
Eleven of the written submissions expressed concerns regarding the accessibility of the planned NCN. A majority of these responses stressed the importance of seamless experiences through intersections for cyclists. Other submissions expressed concerns over accessibility to the NCN for disabled individuals. Specific concerns regarded the inability for adapted cycles to pass through “kissing gates” and the adapted cycle parking requirements. Additionally, a few submissions highlighted the need to connect cyclists to town centres and schools among other points of interest and stressed the need for these connections to facilitate daily commuting trips.

## C.5 Stakeholder Workshops

A series of 1-on-1 meetings or workshops were held with engaged parties at various stages of the project. Initially these focused on raising awareness of the project, receiving feedback on project objectives, and obtaining data regarding existing and planned cycle infrastructure. During Stage 3 of the plan development, it involved a discussion on key destinations and network corridors. Participation in these workshops was high and the various stakeholders were positive regarding the proposals. They provided feedback and guidance on how to proceed with the analysis and insights on areas or issues to be considered when developing the network.

## C.6 Public Survey Feedback

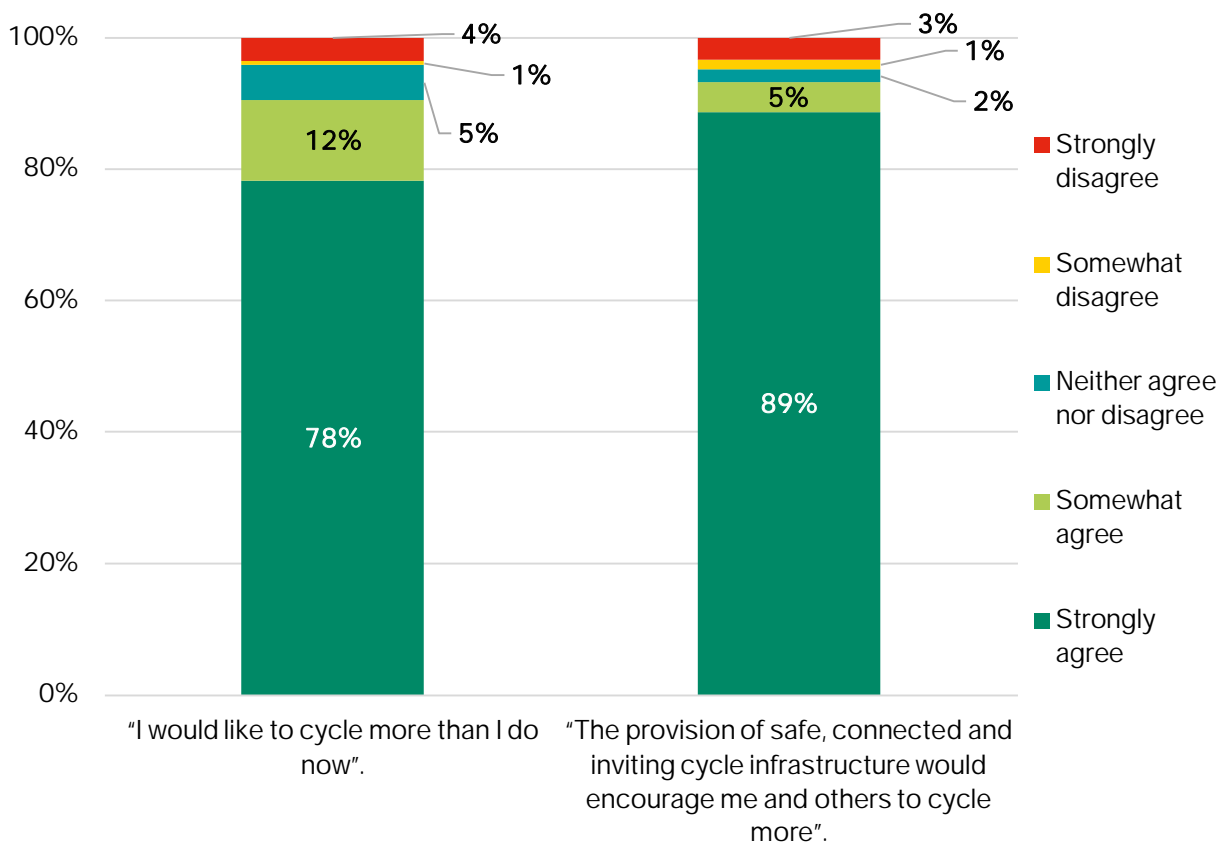
The respondents to the survey cycled more frequently compared to a nationally representative sample<sup>9</sup> (as might be expected based on engagement with and promotion by cycle advocacy groups).



**Figure C.1 : Cycle Trip Frequency**

The vast majority of respondents agreed that they would like to cycle more than they do now and that the provision of safe, connected and inviting cycle infrastructure would encourage them to do so.

<sup>9</sup> As capture via market research, see Appendix D



**Figure C.2 : Desire to Cycle More and the NCN Plan Vision**

Most respondents agreed that the proposed NCN succeeds in achieving the Plan's objectives.

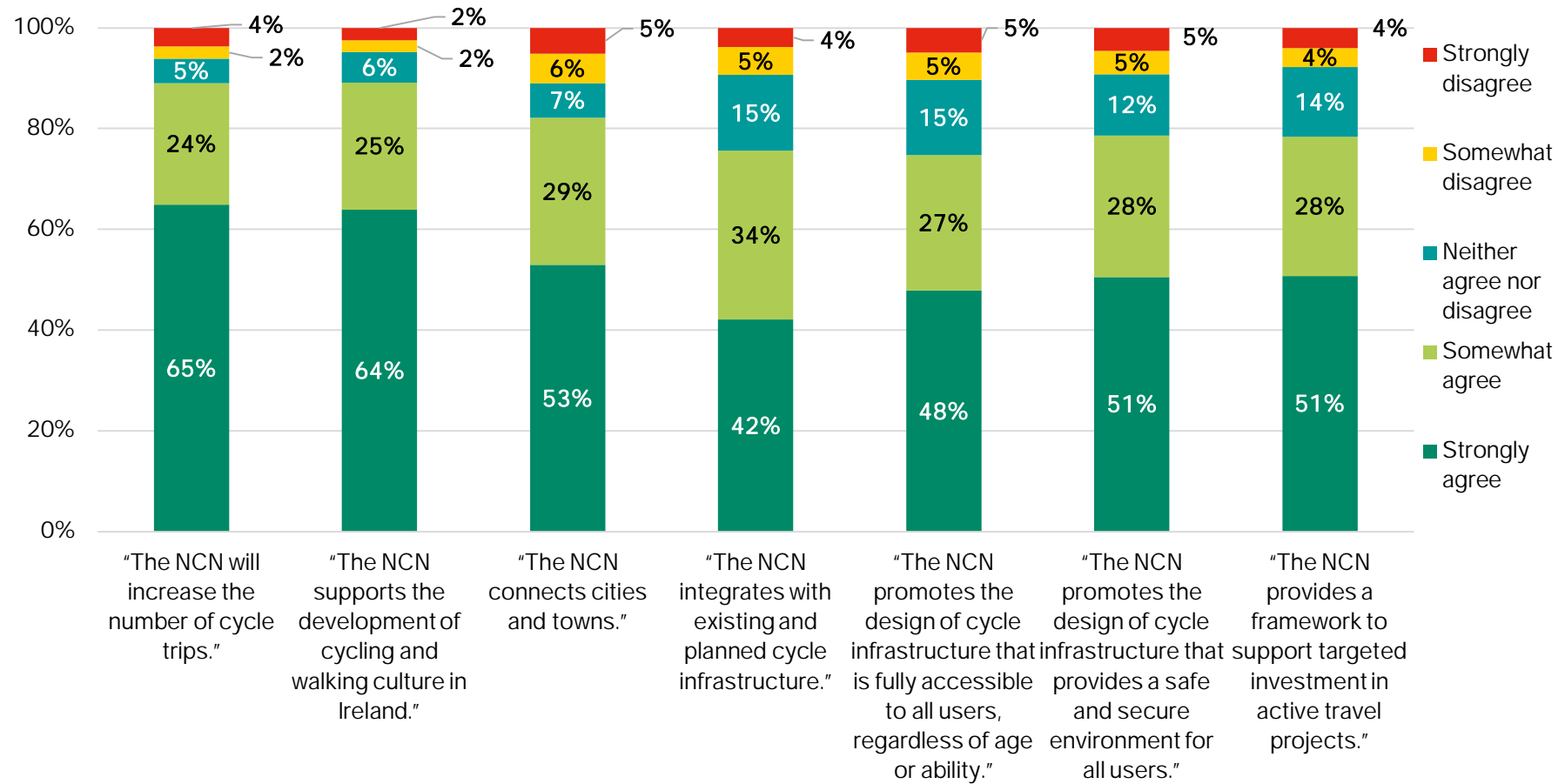
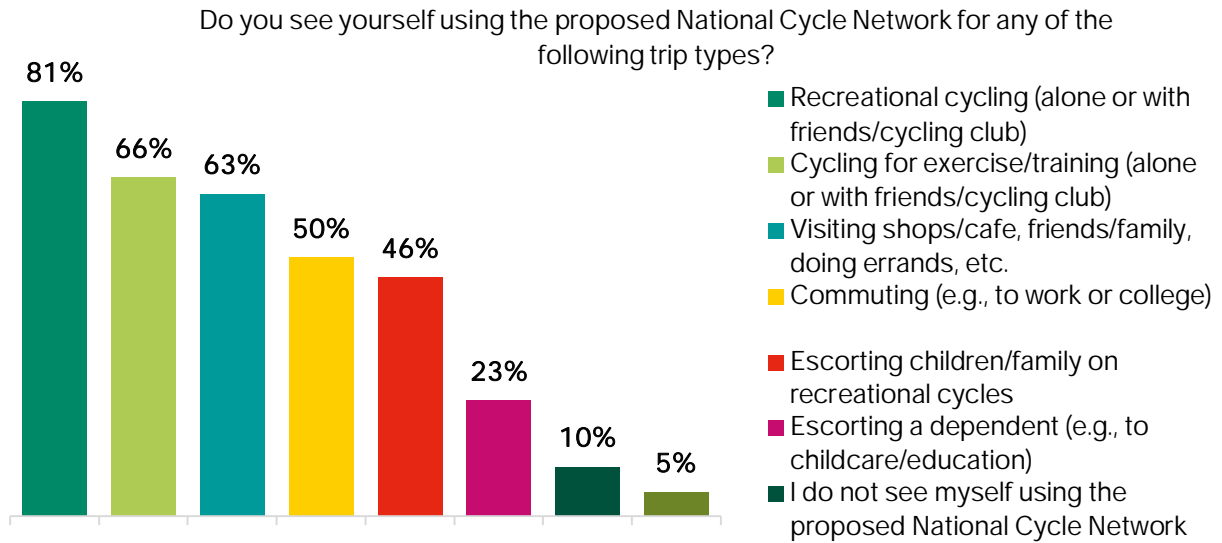


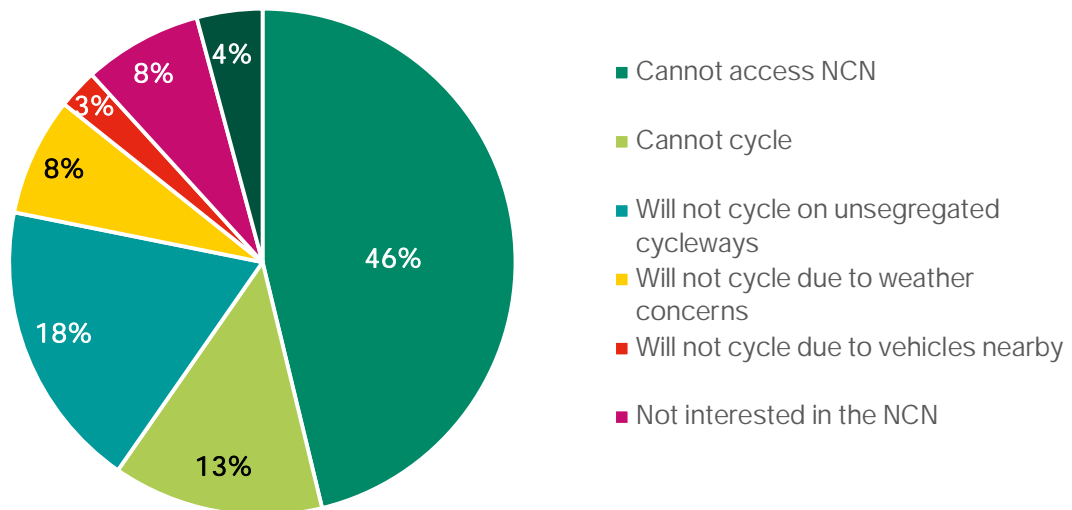
Figure C.3 : Proposed NCN and Plan Objectives

On the survey's question concerning potential reasons to use the proposed network, 81% of respondents indicated their intention to use the NCN for recreational cycling followed by exercise with 66%. Utility trips to shops or friends and commuting to work / college were third and fourth respectively – see Figure C.4.



**Figure C.4 : Potential Future Use of NCN**

While only 130 respondents (10%) selected the option of “I do not see myself using the proposed NCN” in the set of closed questions, 216 respondents (16%) provided a detailed response as to why they would or could not use it. Access to the NCN based on the respondent’s home location was the primary reason highlighted (46%). Safety related concerns were the second most popular answer, due to a perceived lack of segregated cycleways in many of the proposed corridors. Figure C.5 presents these responses.



**Figure C.5 : “If you do not see yourself using the proposed National Cycle Network – Why not?”**

Question 8 requested feedback specifically on the SEA Environmental Report – these responses are incorporated in the SEA process. Question 7 of the feedback survey was available for respondents to provide a comment / submission regarding any element of the NCN.

The 889 responses to Question 7 (65% of all submissions) were categorised to better understand respondents’ feedback regarding the proposed NCN. As presented in the figure below, 39% of the comments concerned corridor selection, while 25% of comments related to safety and 18% related to



both accessibility and the implementation of the NCN Plan. These categories are examined in more detail below.

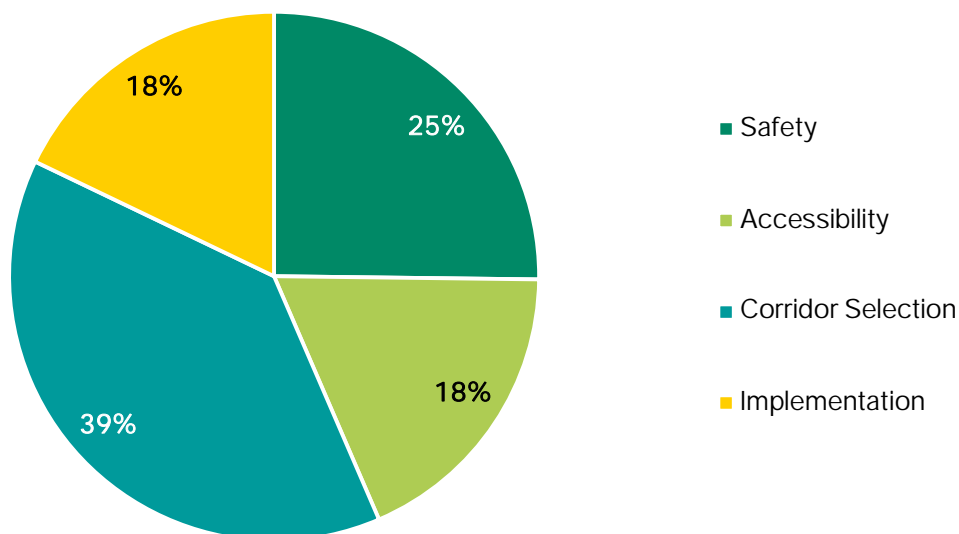


Figure C.6 : Categorisation of 'Open' Text Submissions

### Corridor Selection

343 submissions included a reference to corridor selection. These submissions mainly included requests to extend the network to additional settlements or key destinations. The other two subcategories were related to recommending a new node or changing the alignment of a proposed route – see Figure C.7. Appendix E provides a detailed analysis of recommendations received regarding the corridor selection.

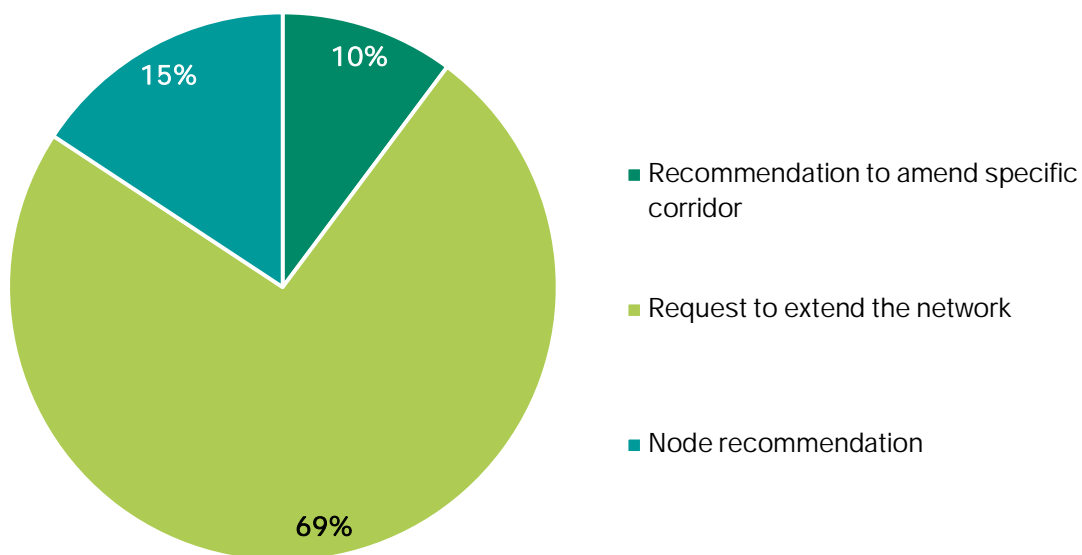


Figure C.7 : Corridor Selection Sub-Categories

### Safety

224 submissions referenced safety issues. Segregation of cycle infrastructure was the main concern of these submissions - highlighting the preference for physically separating NCN routes from vehicular traffic to provide a safe cycle environment for everyone. The importance of educating cyclists and car drivers was also highlighted. High speeds and volumes of adjacent traffic were two factors identified as impacting cyclists' safety.

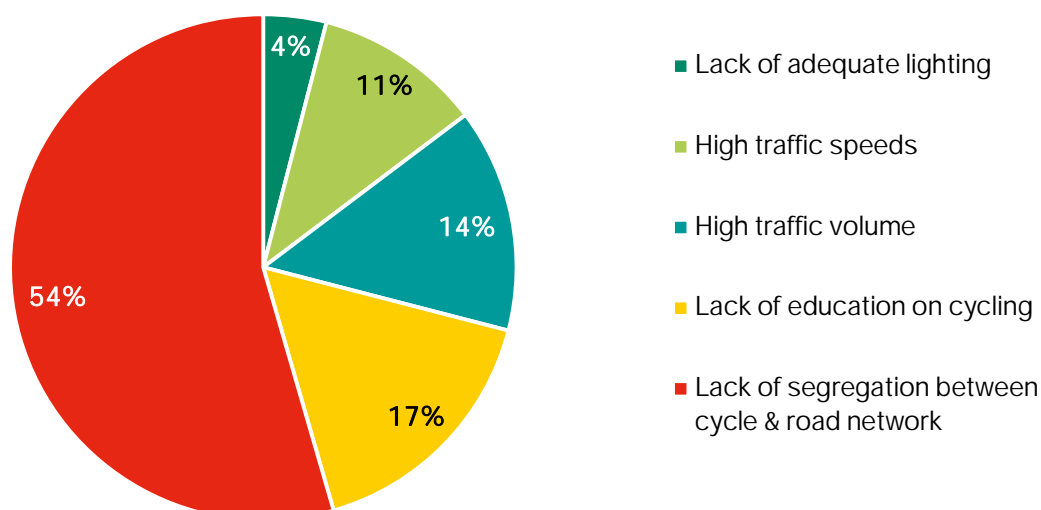


Figure C.8 : Safety Sub-Categories

### Amenities and Accessibility

163 submissions reference amenities and accessibility issues. These included providing easy access to towns and key destinations, continuous routes at junctions and roundabouts (noting that there is not adequate current infrastructure along junctions for cyclists and drivers to safely travel), as well as access for people with disabilities and general access to cycles. These are presented in the figure below.

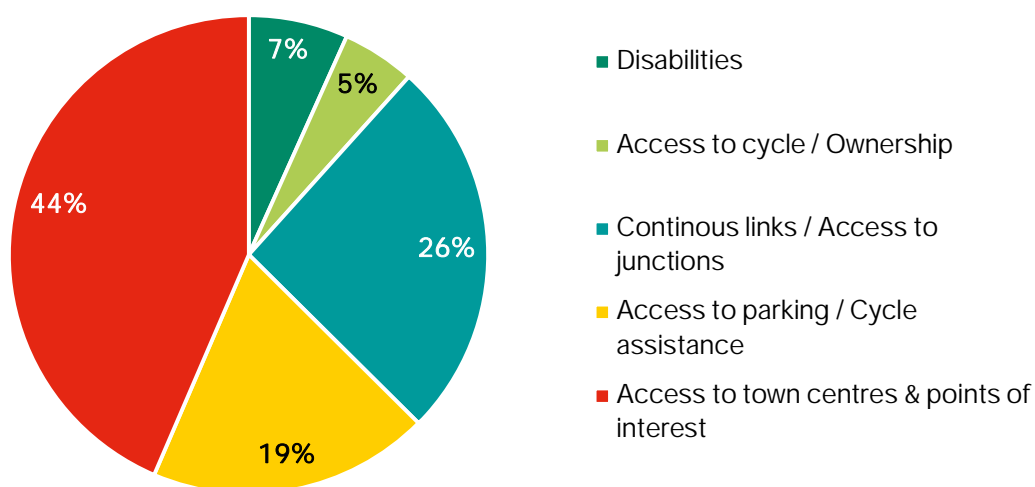


Figure C.9 : Amenities and Accessibility Sub-Categories

### Implementation

159 submissions referenced the implementation of the NCN. 47% of these discussed incorporating and / or improving existing cycle and other linear infrastructure. Implementation timeline was raised by 26% of these submission and prioritisation of implementation by 19%. 8% discussed the involvement of different entities in the implementation of the NCN. These are presented in the figure below.

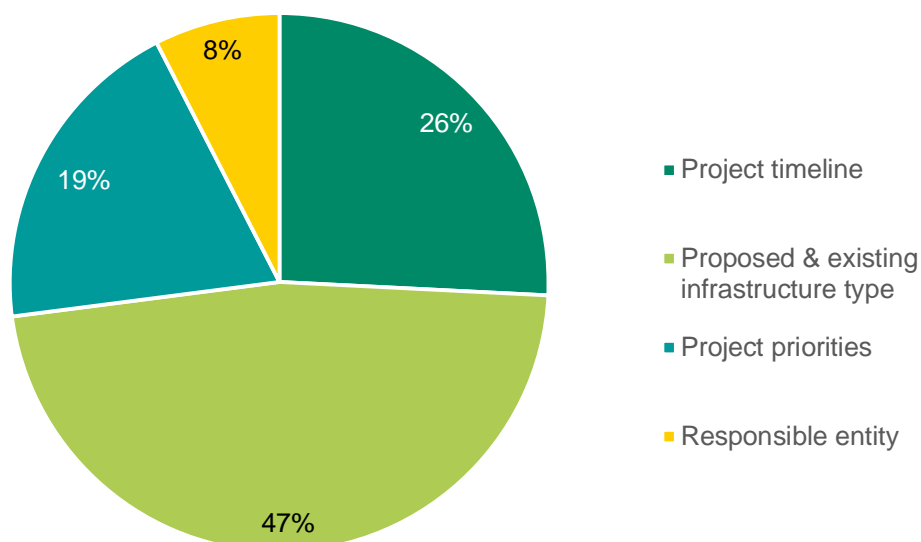


Figure C.10 : Implementation Sub-Categories

## C.7 Feedback on Proposed Corridors

Feedback received from the public consultation was analysed, as summarised below, and taken into consideration before a review and finalisation of the NCN.

Table C.2 : Proposed Changes on the NCN from Public Consultation

Reference	Corridor ID	Corridor Name	No. of Submissions	Rationale	Response	Written Submissions
1	NA	Athenry to Sligo	125	<p>Conversion of the Western Railway Corridor from Athenry to Sligo into a dedicated cycle path would incorporate Athenry, a town with a current population of over 5,000, into the NCN and provide a more direct link to Sligo. The proposed NCN corridors overlap with the Western Railway Corridor at two sections: from Tuam to Claremorris and from Tubbercurry to Sligo. Many submissions voiced opinions in favour of extending the NCN along the remainder of the rail corridor south from Tuam to Athenry and north from Claremorris to Tubbercurry.</p> <p>The proposed advantage of using this corridor is that the right of way is already owned.</p> <p>Opposition to using the Western Railway Corridor as part of the NCN was also voiced in a smaller number of submissions, stating that it would prevent any future reopening of the railway for passenger / freight services.</p>	<p><i>Inclusion of Athenry a valid concern for NCN – should be reconsidered as part of Galway-Athlone corridor option.</i></p> <p><i>Direct connection between Sligo and Athenry not a feasible link in and of itself – dependent on potential for greenway along Western Railway Corridor.</i></p> <p><i>Use of Western Railway Corridor not determined under NCN Plan, development of greenway using the facility could be determined under separate greenway project.</i></p> <p><i>Minor refinement to Galway-Athlone corridor to include Athenry – no adjustments required along proposed Galway-Sligo corridors.</i></p>	<p>Wheels of Athenry (promotes inclusion of Athenry in network and highlights potential development of Western Railway Corridor for rail use)</p> <p>East Mayo Greenway Group (promotes converting the railway into cycle infrastructure, focusing on Charlestown to Claremorris)</p> <p>Galway Cycling Campaign (advocates for inclusion of Athenry on the NCN)</p>
2	NA	Lee to Sea Greenway – Inniscarra Dam to	30	<p>Incorporation of this proposed greenway which is within 2km of 157,000 people, serves almost 50,000 students and staff and</p>	<p><i>Most of the proposed greenway falls under proposed NCN corridors around Cork City – with exception of</i></p>	<p>Cork Transport and Mobility Forum, TIER Mobility UK &amp; Ireland</p>

Reference	Corridor ID	Corridor Name	No. of Submissions	Rationale	Response	Written Submissions
		Crosshaven through Cork City		tertiary education centres and will connect business centres with recreational areas	<i>existing infrastructure between Carrigaline and Crosshaven – no adjustment required to proposed NCN.</i>	
3	NA	Bandon to Bantry	15	Incorporates proposed greenway along existing abandoned railway to attract tourists and provide commuting option in West Cork	<i>Proposed greenway assessed and advanced separately to NCN.  Proposed greenway does not connect with any towns &gt;5k population – and thus does not meet the core NCN requirement - no adjustment required to proposed NCN.</i>	
4	NA	Carlow to Enniscorthy	10	Connects Bunclody and 60,000 residents along this coast to midlands corridor with the NCN, will encourage both tourism and daily commuting trips along the route	<i>Bunclody population &lt;2k (2016 census), no other towns &gt;1k along proposed route – no adjustment required to proposed NCN.</i>	
5	NA	Cahir to Cashel	7	Inclusion of a proposed greenway will provide a connection between tourist areas and will connect Cashel, a town of over 4,000 people	<i>Proposed greenway assessed and advanced separately to NCN.  Cashel &lt;5k population (2016 census) and tourist destinations determined to not be NCN nodes in and of themselves – no adjustment required to proposed NCN.</i>	

Reference	Corridor ID	Corridor Name	No. of Submissions	Rationale	Response	Written Submissions
6	12A	Galway to Castlebar	6	Cycle paths along this corridor without existing cycle infrastructure will encourage a modal shift for commuters in towns surrounding Galway with this alternate corridor option.	<i>NCN Corridor 12B performed better than 12A in Corridor Assessment, especially regarding connecting settlements, schools and sports facilities – no adjustment required to proposed NCN.</i>	Galway Cycling Campaign
7	NA	Westport to Leenane	5	Attractive for leisure cyclists, can make use of existing infrastructure to provide coastal access	<i>Leenane population &lt;1k (2016 census), tourist offering better suited to potential greenway network – no adjustment required to proposed NCN.</i>	Galway Cycling Campaign
8	NA	Rosslare to Waterford	4	Redesignating the current railway into a greenway by removing the rail infrastructure would provide a more direct connection through the southern areas of County Wexford. Opposition to the removal of the railway was also voiced.	<i>Potential use of existing rail corridor pending Irish Rail strategic review – no adjustment required to proposed NCN.</i>	
9	NA	Naas to Carlow	4	NCN cycleway through this corridor would connect smaller towns (like Brannockstown and Grangecon) with insufficient public transport access to larger population centres.	<i>Both towns listed &lt;1k population (2016 census) – no adjustment required to proposed NCN.</i>	
10	NA	Clonmel to Thurles	3	Existing railways can be repurposed into a tourist connection between large population centres in County Tipperary through underserved midlands region.	<i>NCN connects secondary nodes to primary nodes (or to secondary nodes if that is the most appropriate link to the primary node). Suggested link</i>	Tipperary County Council

Reference	Corridor ID	Corridor Name	No. of Submissions	Rationale	Response	Written Submissions
					<i>better suited to county cycle network – no adjustment required to proposed NCN.</i>	
11	NA	Belleek, Rossnowlagh and Bundoran with Ballyshannon	3	Proposed cycleways to connect County Donegal to Northern Ireland via local amenities to increase tourist and leisure activity in the region that aligns with NI Strategic Greenways proposal.	<i>NI Strategic Greenway will be integrated with the NCN – Sligo-Donegal corridor could be adjusted in future based on progress of suggested greenway; no adjustment required to proposed NCN at present.</i>	
12	NA	Great Western Greenway	2	Inclusion of the Great Western Greenway will increase access to western parts of the country for tourists and residents alike, emphasising Irelands focus on environmental sustainability.	<i>Great Western Greenway already established and functioning successfully. No settlement &gt;5k (2016 census) west of Westport along the greenway – no adjustment required to proposed NCN.</i>	
13	NA	Buncrana to Inishowen	2	Incorporation of this proposed greenway would increase access to beginning of Wild Atlantic Way cycle route in an area underserved by public transport.	<i>Proposed greenway provides connection, no settlement &gt;5k (2016 census) north of Buncrana – no adjustment required to proposed NCN.</i>	
14	NA	Tralee to Dingle	2	Current cycleway development lacks segregation and is therefore unsafe for cyclists.	<i>Tourist destination better suited to greenway solution – no adjustment required to proposed NCN.</i>	

Reference	Corridor ID	Corridor Name	No. of Submissions	Rationale	Response	Written Submissions
15	NA	Athenry to Loughrea	2	Existing railway corridor between these two population centres can be leveraged to create this connection for leisure and commuting trips. The proposed route would travel north from Loughrea on the existing rail corridor and then west to Athenry.	<i>Minor refinement required to Galway-Athlone corridor to include Athenry.</i>	
16	NA	Middleton to Whitegate	2	Cycleway along the harbour would connect various existing cycleways, increasing accessibility in County Cork for tourist and leisure cyclists.	<i>Tourist destination better suited to greenway solution – no adjustment required to proposed NCN.</i>	
17	NA	Dublin to Blessington	2	Increases access to iconic cycle route, Wicklow Way, allowing for tourists and commuters a comfortable journey along a corridor currently without segregated cycleways.	<i>Blessington-Naas corridor included in proposed NCN which then connects onto Dublin. Direct Dublin-Blessington connection via Dodder Greenway included in proposed GDA network – no adjustment required to proposed NCN.</i>	
18	56A	Tullamore to Portlaoise	2	Proposed revision to provide more direct link between Portlaoise and Tullamore via Mountmellick increasing connectivity between rural regions and providing commuter access to cyclists in Mountmellick	<i>NCN corridor 56B incorporates secondary nodes of Portarlinton town and train station so is preferred route – no adjustment to proposed NCN.</i>	
19	NA	Trim to Kilcock	2	Proposed revision to provide more direct link between Trim and Kilcock adding cycle infrastructure onto an	<i>Trim connected to Royal Canal Greenway via Ballynakill. Proposed GDA network</i>	



Reference	Corridor ID	Corridor Name	No. of Submissions	Rationale	Response	Written Submissions
				already heavily used cycle corridor and increasing access to the Royal Canal Greenway in Kilcock.	<i>provides link from Trim to Kilcock – no adjustment required to proposed NCN.</i>	
20	NA	Farranfore to Caherciveen	2	Farranfore, a transportation hub, lacks connection to growing midsized towns in County Kerry.	<i>Proposed greenway covers rural connection – no adjustment required to proposed NCN.</i>	
21	NA	Galway to Spiddal	2	No details provided; suggested expansion of network.	<i>No settlement &gt;5k (2016 census), better suited to county cycle network – no adjustment required to proposed NCN.</i>	Galway Cycling Campaign
22	NA	Wexford to New Ross	2	Suggested as a contingency route for County Wexford if other routes are not feasible. Proposed to run alongside the N25.	<i>Proposed Wexford-New Ross corridor aligns with other regional corridors and reduces potential parallel / duplicate sections – no adjustment required to proposed NCN.</i>	Wexford Bicycle User Group, Cyclist.ie
23	NA	Navan to Clonee	2	Proposed additional corridor connecting Navan more directly with Dublin via Clonee (rather than via Swords). No details provided; suggested expansion of network.	<i>Proposed GDA cycle network provides suggested link – no adjustment required to proposed NCN.</i>	Meath County Council, Navan Cycling Initiative
24	NA	Carrickmacross to Longford	1	Network south of border deemed to be light, suggestion of increasing density by connecting Carrickmacross to Longford.	<i>Additional East / West route would connect Bailieborough (2.7k) and Ballyjamesduff (2.7k). Very long connection of secondary node to non-adjacent primary node – no</i>	

Reference	Corridor ID	Corridor Name	No. of Submissions	Rationale	Response	Written Submissions
					<i>adjustment required to proposed NCN.</i>	
25	NA	Ballybofey to Glenties	1	Access to central County Donegal can be increased by developing cycle path along this corridor's abandoned railway.	<i>No settlements &gt; 1k (2016 census) connected – no adjustment required to proposed NCN.</i>	
26	85A	Longford to Cavan	1	Proposed revision to provide more direct link between Longford and Cavan by choosing this alternative corridor option, providing access to inland rural towns.	<i>While NCN corridor 85A is the most direct connection between the two nodes, it performed the poorest amongst the three options – no adjustment required to proposed NCN.</i>	
27	NA	Boyle to Ballaghaderreen	1	No details provided; suggested expansion of network.	<i>Boyle is included on the Longford-Sligo corridor. Ballaghaderreen is settlement of approximately 2k (2016 census) with no other settlements &gt; 1k between it and Boyle – no adjustment required to proposed NCN.</i>	
28	NA	Waterford to Kerry via Mallow and Fermoy	1	No details provided; suggested expansion of network to include a planned greenway and extension west from Mallow.	<i>Proposed greenway connects Dungarven to Mallow (via Fermoy). All suggested connections are between secondary nodes. No primary node included – no adjustment required to proposed NCN.</i>	

Reference	Corridor ID	Corridor Name	No. of Submissions	Rationale	Response	Written Submissions
29	NA	Carnew to Gorey	1	Provide safe cycle access to busy commuter corridor.	<i>Carnew town of approximately 1k (2016 census), connection to Gorey better aligned to county network – no adjustment required to proposed NCN.</i>	
30	50A	Enniscorthy to Wexford	1	Route option A on this corridor can use the existing Macmine rail line and wide shoulders on N11 for fully segregated cycleway.	<i>NCN corridor 50A scored well in the Options Assessment, but corridor 50B aligns with other corridors and reduces potential parallel / duplicate sections – no adjustment required to proposed NCN.</i>	Wexford Bicycle User Group
31	NA	Roscrea to Birr	1	Connection between the heritage site of Birr and Roscrea would facilitate active transport and access to larger cities for residents along this corridor.	<i>Birr settlement of approximately 4.4k (2016 census), Roscrea included on NCN as a secondary node. Connection within 20km trip distance, but better aligned to county network – no adjustment required to proposed NCN.</i>	
32	83B	Drogheda to Dundalk	1	No details provided; suggested revision of network to alternative corridor option.	<i>NCN corridor 83B performed well in the Options Assessment, but the selected corridor 83C aligns with a GDA cycle network proposed coastal greenway project – no adjustment required to proposed NCN.</i>	

Reference	Corridor ID	Corridor Name	No. of Submissions	Rationale	Response	Written Submissions
33	73B	Dublin to Naas	1	Existing roadway in poor condition resulting in cycle tire punctures.	<i>NCN corridor 73B performed well in the Options Assessment, but the selected corridor 73B aligns with the planned Grand Canal Greenway project. A parallel corridor via the Dodder Greenway is included in proposed GDA network – no adjustment required to proposed NCN.</i>	
34	NA	Wicklow to Rathdrum	1	Cycleways along this corridor would increase interconnectivity between NCN and regional rail network through connection with Rathdrum train station on Connolly-Rosslare line.	<i>Rathdrum settlement of approximately 1.6k (2016 census), Wicklow included on NCN as a secondary node. Connection within 20km trip distance, but better aligned to county network – no adjustment required to proposed NCN.</i>	
35	NA	Wicklow to Roundwood	1	Connections within Wicklow can increase cycle accessibility for tourists to various attractions.	<i>Roundwood settlement of &lt;1k (2016 census), Wicklow included on NCN as a secondary node. Connection within 20km trip distance, but better aligned to county network – no adjustment required to proposed NCN.</i>	

Reference	Corridor ID	Corridor Name	No. of Submissions	Rationale	Response	Written Submissions
36	NA	Wicklow to Laragh	1	Connections within Wicklow can increase cycle accessibility for tourists to various attractions.	<i>Laragh settlement of &lt;1k (2016 census), Wicklow included on NCN as a secondary node. Connection within 20km trip distance, but better aligned to county network – no adjustment required to proposed NCN.</i>	
37	13A	Castlebar to Longford	1	Existing railway corridor can be leveraged to include Swinford into the NCN by choosing this alternative corridor option.	<i>NCN corridor 13B scored better than 13A in the Options Assessment, particularly regarding settlements. It also aligns better with other proposed corridors reducing duplicate infrastructure – no adjustment required to proposed NCN.</i>	
38	NA	Integration with Liffey Tolka Project	1	Incorporation of these planned cycleways along Dublin Port will create more widespread access to the larger NCN network for cyclists in this area of the city and vice versa.	<i>Dublin Port included as secondary node on NCN. Integration with planned Tolka Project could be included as part of Connolly-Dublin Port corridor, but NCN would not incorporate entire route of proposed Liffey Tolka Project.</i>	Dublin Port Company

## Appendix D

# Market Research Findings

## Findings and Insights from Response to Nationally Representative Survey

Question / Theme	Findings	Insights
<b>Who Cycles?</b>	<ul style="list-style-type: none"> <li>• Those who cycle more are generally more confident cyclists</li> <li>• Those aged 55+ are over-represented in non-cyclists and those aged 35-44 are over-represented in Enthusiastic Cyclists</li> <li>• Female representation decreases with trip frequency</li> <li>• ABC1 socio-economic group<sup>10</sup> is over-represented in Enthusiastic Cyclists</li> <li>• Those living in larger settlements tend to cycle more frequently</li> <li>• E-cycle ownership increases with frequency of trips, although Enthusiastic Cyclists are less likely than Daily Cyclists to own e-cycle (38% compared to 43%)</li> <li>• E-cycle owners tend to cycle more frequently, than non-motorised cycle owners</li> <li>• While the vast majority of respondents would like to cycle more (80%), desire to cycle aligns more with current cycling confidence level</li> </ul>	<ul style="list-style-type: none"> <li>• There is a large cohort of the population currently not cycling who want to cycle (approximately 20% of the general population)</li> <li>• The more confident a person is on a cycle, the more they want to cycle and the more frequently they cycle – increasing general cycling confidence should increase both the number of active cyclists and cycle trips</li> <li>• Campaigns to increase cycling may need to target differing needs of segments; women, those aged 55+ and more rural residents are all less likely to cycle</li> </ul>
<b>Where do they Cycle?</b>	<ul style="list-style-type: none"> <li>• While lower in rural areas, the majority of people own or have access to a cycle</li> <li>• Large town and small town residents show the highest desire to own / access a cycle</li> <li>• Respondents less likely to commute by cycle than take a trip by cycle for visiting, recreation or exercise</li> <li>• Most cyclists make trips of &lt;5km, except for recreational (non-family) and exercise trips which are on average longer (54% and 53% respectively)</li> <li>• E-cycles increase the percentage of cyclists making 5-20km commuting trips, but not those making &gt;20km trips.</li> </ul>	<ul style="list-style-type: none"> <li>• Cycle access / ownership programs might be beneficially targeted at rural and small town residents</li> <li>• More people cycle for recreational purposes than commuting purposes, although commuting trips may represent a large proportion of total trips</li> <li>• Longer distance trips (&gt;10km) should cater more towards recreational and exercise use / preferences</li> <li>• Significant increase in &gt;20km commutes potentially limited with increased adoption of e-cycles</li> </ul>
<b>Infrastructure Preferences</b>	<ul style="list-style-type: none"> <li>• Safety is the top factor influencing a person's decision to make a trip by cycle</li> <li>• Enthusiastic Cyclists rank safety and security lower, but adjacent traffic volume and speed higher than other groups as well as the need to transport people / items</li> <li>• Women rank safety and security higher than men, but this decreases with age – “None of</li> </ul>	<ul style="list-style-type: none"> <li>• Even those with no confidence cycling in general feel some level of confidence, on average, on a greenway or cycleway</li> <li>• Providing safe segregated cycle infrastructure should increase general cycling confidence and be the</li> </ul>

<sup>10</sup> CSO classification to represent 'Professional workers'

Question Theme	Findings	Insights
	<p>the above” is top ranked in 55+ age group<sup>11</sup>. Men consistently rank safety and security as top factor, but similar to women “None of the above” also increases with age.</p> <ul style="list-style-type: none"> <li>• Segregated cycle infrastructure (greenways and cycle tracks) is preferred for &gt;60% of respondents across all trip types. Regional / local roads and grey ways score highest for exercise use (7%).</li> <li>• The more frequently you cycle, the more confident a cyclist you are</li> <li>• Cycling confidence is impacted by infrastructure; average confidence on greenways and cycle tracks increases even for those with no confidence</li> <li>• Women are less confident cyclists than men across all age groups and appear to lose confidence with age</li> </ul>	<p>preferred option for most cyclists across all trip types</p> <ul style="list-style-type: none"> <li>• Safety should be the top priority for infrastructure design</li> <li>• Ingrained behaviour / preferences may limit change to cycling behaviour in older age groups</li> </ul>
<b>Route Preferences</b>	<ul style="list-style-type: none"> <li>• Most people are willing to divert commuting trips for segregated cycle infrastructure</li> <li>• Preference between using a regional road or national road (with cycle lane) is not clear cut, with exception of Enthusiastic Cyclists who strongly prefer using a regional road</li> <li>• More direct long-distance trips are slightly preferred in general (44% compared to 37%), with the exception of Enthusiastic Cyclists who have a strong preference for longer greenway routes (48% compared to 28%)</li> <li>• There is general agreement that pedestrians should share space with cyclists on greenways (53% agree, 27% disagree)</li> </ul>	<ul style="list-style-type: none"> <li>• Cyclists will take a longer route to use safer infrastructure</li> <li>• Enthusiastic Cyclists have preferences distinct to other cyclist segments, but are a small proportion of cyclists overall</li> <li>• Greenways should continue to facilitate both pedestrians and cyclists</li> </ul>

<sup>11</sup> The response options to the question “What factors influence your decision to make a trip by cycle?” were: i) Safety and Security, ii) Need to transport other people or items, iii) Bicycle parking at destination, iv) Landscape/ scenery, v) Adjacent traffic speed, vi) Adjacent traffic volume, vii) Gradient, viii) Number of junctions, ix) Other (option to specify), and x) None of the above.



Appendix E

## Corridor Assessment

This Appendix outlines the Assessment Framework developed to determine the best performing Corridor, where multiple Corridor Options between two nodes had been identified.

It also includes a series of tables presenting the assessment of the corridor options considered for the NCN and a summary of the preferred corridor options.

## E.1 Approach

Where multiple options for NCN Corridors had been identified, the performance of each option was determined by consideration against a range of assessment criteria as described below. The assessment of Corridor Options against these criteria was informed by a series of specific data sets.

NCN Plan Objectives	NCN Assessment Criteria	Data Set
Increase the number of cycle trips by improving the provision of safe and attractive cycling infrastructure.  Connect to strategic destinations outside of urban areas as appropriate (including centres of education, centres of employment, and leisure destinations).	Commuter Trips	Database of smaller settlements between the 1,000 and 5,000 population (Other Nodes)
	School Trips	Data base of Primary and Secondary Schools - Developed by AECOM
	Leisure Trips	Data base of leisure facilities – including sports clubs and off-road trails - Developed by AECOM
Promote the design of cycling infrastructure that meets safety requirements.  Promote the design of cycling infrastructure that provides a safe and secure environment for all users.	Potential Safety Impacts	National Transport Models Road Network showing flows in the form of AADT, posted speed limits and average speeds.
Integrate with existing and proposed cycling infrastructure (including greenways, safe routes to schools, the EuroVelo network, Interreg projects), as appropriate  Incorporate existing greenways, disused railways, canals, bypassed national roads, regional and local roads, long distance trails, as appropriate.  Propose corridors to maximise the number of users.  Future-proof cycle route capacity, taking account of population growth and additional demand from modal shift.  Connect to strategic destinations outside of urban areas as appropriate (including centres of education, centres of employment, and leisure destinations).	Integration with Existing Cycle Infrastructure	Database of existing cycle infrastructure – including greenways, Blueway's and Eurovelo routes – developed by AECOM
	Integration with Planned Cycle Infrastructure	Database of proposed cycle infrastructure – including greenways, Blueway's and Eurovelo routes – developed by AECOM
	Integration with Existing Infrastructure	Database of disused railways developed by AECOM
	Integration with transport modes	Database of train stations - Developed by AECOM
	Integration with Tourist Attractions	Fáilte Ireland database of tourist attractions with visitor numbers <200k total visitors in 2019.
	Scenery and Route Attractiveness	ESRI Basemap

NCN Plan Objectives	NCN Assessment Criteria	Data Set
Enhance local environments and biodiversity where possible (e.g., pollinator plans, green corridors).  Support the development of cycling and walking culture in Ireland.	Impact on sensitive areas	Database of Special Protection Areas, Special Areas of Conservations and Proposed National Heritage Areas / National Heritage Areas and architectural conservation areas – Developed by AECOM.
Connect to strategic destinations outside of urban areas (including transport hubs and tourist destinations), as appropriate.	Social Inclusion	Pobal deprivation index - Developed by AECOM
	Integration with Smaller Settlements	Database of smaller settlements between the 1,000 and 5,000 population (Other Nodes)
	Gradient	ESRI Contour Maps

## E.2 Assessment Methodology

Geospatial analysis of multiple datasets was central to the assessment of options. ArcGIS was used extensively to undertake the assessment of corridor options. A 2km buffer was applied from the centre line of indicative routes to give a 4km assessment zone along each of the NCN Corridors. Within these 4km corridors key assessment criteria as describe above were calculated to inform a multi criteria analysis of options.

The results of the geospatial analysis for each option were then manually compared against the other option(s) for the same corridor under each of the categories listed here – see Section E.3.

### Demand

The NCN Plan aims to increase demand for cycling and walking by improving the provision of safe and attractive active travel infrastructure. Acting as a multifunctional network available for leisure users, tourists, and commuters.

#### Commuting Trips

The existing level of commuting demand was estimated for each Corridor Option based on populations in the area using the CSO settlements shapefile. The higher the population the higher the potential commuting demand for an option under consideration.

#### Leisure Trips

To assess how each Corridor Option promotes the use of active modes for leisure trips a database of leisure locations was compiled, containing the location of sporting clubs, off-road cycle trails and other leisure facilities. Corridor Options were then buffered<sup>12</sup> in ArcGIS and intersected with leisure facility locations. The number of locations within the Corridor buffer was counted and compared across Corridor Options to highlight the best performing Option.

#### School Trips

A database of all primary and secondary school locations in the country was compiled and plotted in ArcGIS. Corridor Options were then buffered<sup>13</sup> in ArcGIS either side of the Option and intersected with the location of schools. The number of schools within the Corridor Option buffer was counted and compared across Corridor Options to highlight the best performing Option.

<sup>12</sup> 2km buffer is applied in all areas

<sup>13</sup> 2km buffer is applied in all areas

## Safety

The NCN Plan aims to deliver a cycle network which incorporates modern design principles and drives improvements in cycle safety nationally which is a central objective of the NCN Plan.

### Potential Safety Impacts

To assess the potential safety impacts on Corridor Options the National Model Road Network was used to identify National Roads, the traffic flow on these roads in the form of Annual Average Daily Traffic (AADT), posted speed limits and average speed. Crossings of National Roads was also taken into account and compared across Corridor Options.

## Integration

Corridor Options were assessed on how well they integrate with existing and planned transport infrastructure. The NCN will promote integration with local planning policies and integration in respect to land-use activities as well as other strategy proposals.

### Integration with Existing Infrastructure

To assess how well Corridor Options integrate with existing infrastructure, a buffer was applied to the route corridors. This buffer zone was assessed against a database of existing Greenways, Blueways and Eurovelo routes, which was developed by AECOM. The number of connections and length overlapping with existing infrastructure were counted and compared against other route corridors to determine the level of integration with existing infrastructure provided by each option.

### Integration with Planned Infrastructure

To assess how well Corridor Options integrate with proposed infrastructure a buffer was applied to the route corridors. This buffer zone was assessed against a database of planned Greenways, Blueways and Eurovelo routes, which was developed by AECOM. The number of connections and length overlapping with planned infrastructure was counted and compared against other route corridors to determine the level of integration with existing infrastructure provided by each option.

### Integration with Other Existing Alignments

To assess how well Corridor Options integrate with proposed infrastructure a buffer was applied to the route corridors. This buffer zone was assessed against a database of historical rail routes, which was developed by AECOM. The number of connections and length overlapping were counted and compared against other route corridors to determine the level of integration with other existing alignments provided by each option.

### Integration with Transport Modes

The proximity of cycle infrastructure to appropriate train stations can impact the level of demand and utilisation of the route being the only public transport mode that integrates with cycling. The proximity of a Corridor Option to appropriate train stations was assessed based on the number of train stations within the buffer. The number of stations was counted within a Corridor Option and ranked against other Options.

### Integration with Tourist Attractions

There is a need to facilitate enhancements to access tourism facilities via active travel modes. The NCN Plan seeks to provide connections to priority tourist destinations where possible. This was assessed using a database of visitor attractions counting the number of attractions within the assessment corridor.

### Scenery and Route Attractiveness

The NCN Plan seeks to provide aesthetically attractive routes for its users. Ireland's landscape is rich and varied, with diverse lowland and upland, lake, river, and shore character areas. Enhanced active travel networks have the potential to support the enjoyment and understanding of Ireland's diverse landscapes. This was assessed based on an option's interaction with the natural environment and landscape.

## Environment and Biodiversity

Corridor Options were assessed on how they potentially might impact the environment by considering how options impinge on designated and sensitive sites. To assess the impact on the natural and built environment a database of designated sites was compiled which included:

- Special Protection Areas.
- Special Areas of Conservation.
- Proposed National Heritage Areas / National Heritage Areas.
- Sensitive natural environmental sites.
- Architectural conservation areas.

These sites were mapped in GIS to highlight areas of potential concern. The number of interactions per route corridor were then recorded and compared across corridor options to determine the performance of options with respect to their impact on sensitive areas.

Corridor Options were assessed under the Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) processes to determine the potential impacts of Corridor Options ensuring those with potentially significant negative impacts were not brought forward to the next step. The results of the SEA and AA can be reviewed in Appendix G, Appendix H and Appendix I. The results from the Strategic Environmental Assessment were a key consideration in the corridor selection process for the NCN Plan.

## Accessibility and Social Inclusion

The NCN Plan promotes social inclusion for marginalised groups, interchange between transport modes and low gradient routes.

### Social Inclusion

In order to assess the potential of Corridor Options to improve social inclusion, the Pobal HP Deprivation Index was used. To assess the impact, Corridor Options were plotted in ArcGIS and then intersected with the Pobal Deprivation Index. The number of connections with each area were counted and compared across Corridor Options.

### Integration with Smaller Settlements

In developing Corridor Options emphasis was placed on making connections with existing settlements that fall below the population thresholds to be considered as Primary or Secondary Nodes. This was assessed using the CSO Settlements shapefile filtered to excluded settlements included as Primary or Secondary Nodes.

### Gradient

Severe gradients have a negative impact on the likelihood of people switching to cycling. This element informed the scoring and ranking of Corridors in terms of their demand. Options were ranked based on their route through contour maps with the route with the least amount of gradient change being more favourable.

### E.3 Scoring System

A 5-point Likert scale was used to analyse the different corridor options. The highest rank given showing major advantages compared to the other option(s) and the lowest rank given showing major disadvantages compared to other option(s). This is outlined below. The scores were assigned manually based on a review of the output from the GIS analysis of each option.

Major advantages over other option(s)	2
Minor advantages over other option(s)	1
Comparable to other option(s)	0
Minor disadvantages over other option(s)	-1
Major disadvantages over other option(s)	-2

### E.4 Assessment Summary

Following the analysis and options assessment outlined in the method above, the preferred corridor options are listed below. Full details of the assessment for each corridor are provided in Section E.5.

Corridor Name	Corridor Number	Corridor Option	Corridor Name	Corridor Number	Corridor Option
Derry to Strabane	3	A	Enniscorthy to Wicklow via Arklow	51	A
Letterkenny to Strabane	4	C	Wicklow to Bray via Greystones	52	B
Longford to Sligo	8	A	Bray to Dublin	53	B
Sligo to Ballina	9	B	Portlaoise to Carlow	55	A
Ballina to Castlebar	10	A	Tullamore to Portlaoise	56	B
Galway to Castlebar	12	B	Mullingar to Tullamore	57	B
Castlebar to Longford	13	B	Portlaoise to Naas	59	A
Roscommon to Longford	14	B	Portlaoise to Newbridge	60	A
Roscommon to Athlone	15	B	Mullingar to Edenderry	64	B
Athlone to Longford	16	B	Navan to Mullingar	66	B
Athlone to Tullamore	19	A	Naas to Dublin	73	A
Limerick to Portlaoise	20	A	Celbridge to Dublin	74	A
Tralee to Limerick	26	B	Swords to Dublin	77	B
Cork to Tralee via Killarney	28	B	Navan to Swords	79	A
Port of Cork to Carrigaline	33	B	Balbriggan to Swords	80	B
Cork to Waterford	37	B	Drogheda to Balbriggan	81	B
Cork to Fermoy	38	B	Navan to Drogheda	82	A
Limerick to Cork	39	A	Dundalk to Drogheda	83	C
Limerick to Waterford via Cahir	40	A	Cavan to Navan via Kells	84	A
Kilkenny to Waterford	45	B	Longford to Cavan	85	C
Enniscorthy to Waterford	47	B	Newry to Dundalk	90	B
Enniscorthy to Wexford	50	B			

## E.5 Assessment Details

Options assessments are detailed here. Specifically, the options were assessed based on estimated demand, safety, integration with existing and planned cycle infrastructure, environmental impacts, social inclusion, and connectivity to smaller settlements, transport modes and tourist attractions.

These options, which have been mapped below, explore different potential corridors for linking the nodes identified for the NCN. The tables presented below examine the differences between corridor options in relation to each of the criteria outlined in the previous chapter and utilise the scorings represented in the key below.

The Corridor Options were also assessed as part of the SEA to identify preferred corridors specifically from an environmental perspective – the results of this assessment are contained in the SEA Environmental Report.

Where the corridor options assessment detailed in this section identified a major advantage / disadvantage regarding the environmental category of sensitive areas, the findings of the SEA Environmental Report were integral to determining a distinct preferred option.

### Maps:

The maps included in this section show specific sets of corridor options under assessment. Each map shows a certain section of the overall network and contains multiple corridors (which are referenced in the corresponding tables that follow) and the corridor options can be identified by:

- Option A is outlined in red (–)
- Option B is outlined in a dashed blue (–)
- Option C (where applicable) is outlined in a dashed green (–)
- Corridors with no options for assessment (and not detailed in this appendix) are marked with a thick blue line

## Derry to Strabane

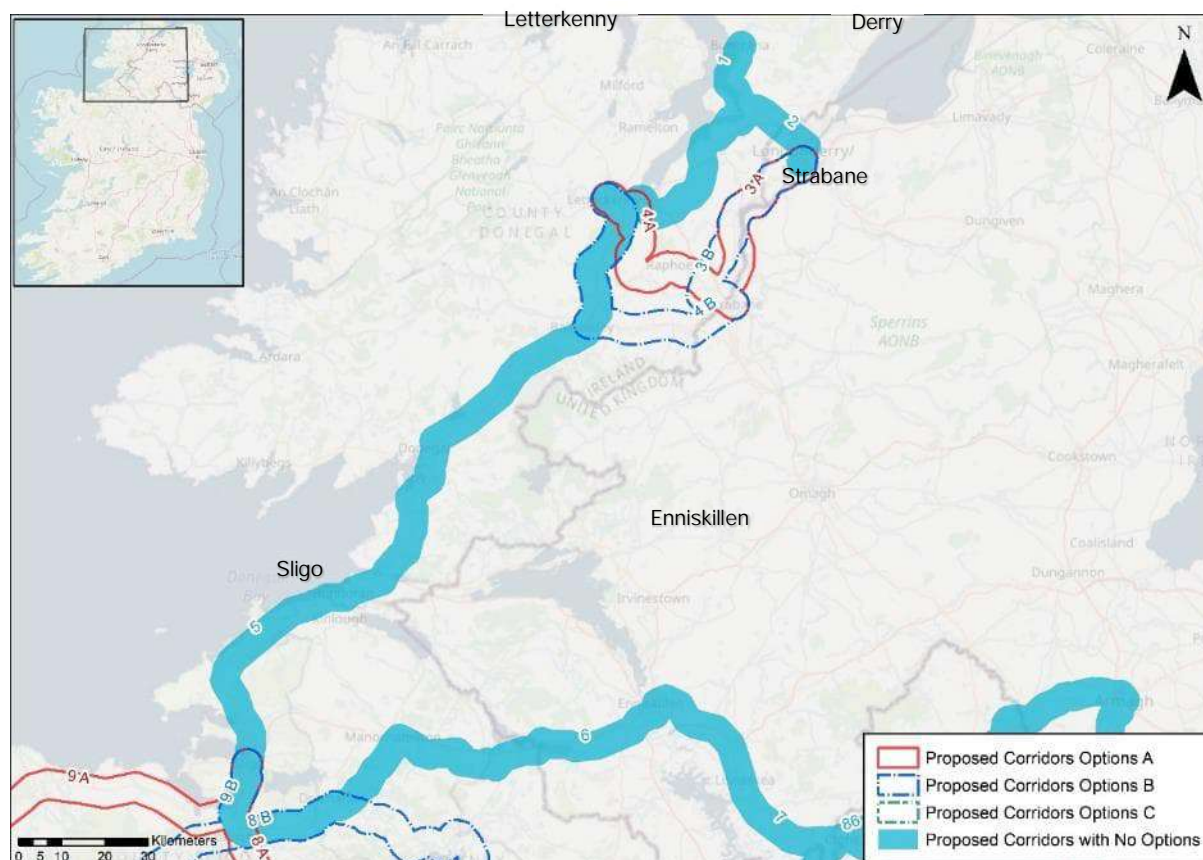


Figure E.1 : Corridor Options 1-5

Table E.1: Derry to Strabane

Corridor 3 - Derry to Strabane		A	B
		Eastern Option	Western Option
Demand	Commuting Trips	0	0
	School Trips	0	0
	Leisure Trips	0	0
Safety	Potential Safety Impacts	0	0
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	2	-2
	Integration with other existing alignments	2	-2
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
Environment	Scenery and Route Attractiveness	2	-2
	Impact on sensitive areas	-2	2
Accessibility & Social inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	0	0
	Gradients	0	0



The Derry to Strabane Corridor has two options. Option A or the Eastern Option diverges east at Upper Maymore crossing the Deele River at Ballindrait whereas Option B diverges west at Upper Maymore, following the River Foyle.

Option A is preferred due to its alignment with planned cycling infrastructure and other alignments, as well as route attractiveness.

### Letterkenny to Strabane

Table E.2: Letterkenny to Strabane

Corridor 4 - Letterkenny to Strabane		A	B
		via Raphoe	via Ballybofey
Demand	Commuting Trips	0	0
	School Trips	0	0
	Leisure Trips	0	0
Safety	Potential Safety Impacts	0	0
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	0	0
	Integration with other existing alignments	0	0
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
	Scenery and Route Attractiveness	0	0
Environment	Impact on sensitive areas	2	-2
Accessibility & Social Inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	0	0
	Gradients	0	0

The Letterkenny to Strabane Corridor has two options, Option A via Raphoe and Option B via Ballybofey.

Option A is preferred due to its low interference with the River Finn SAC.

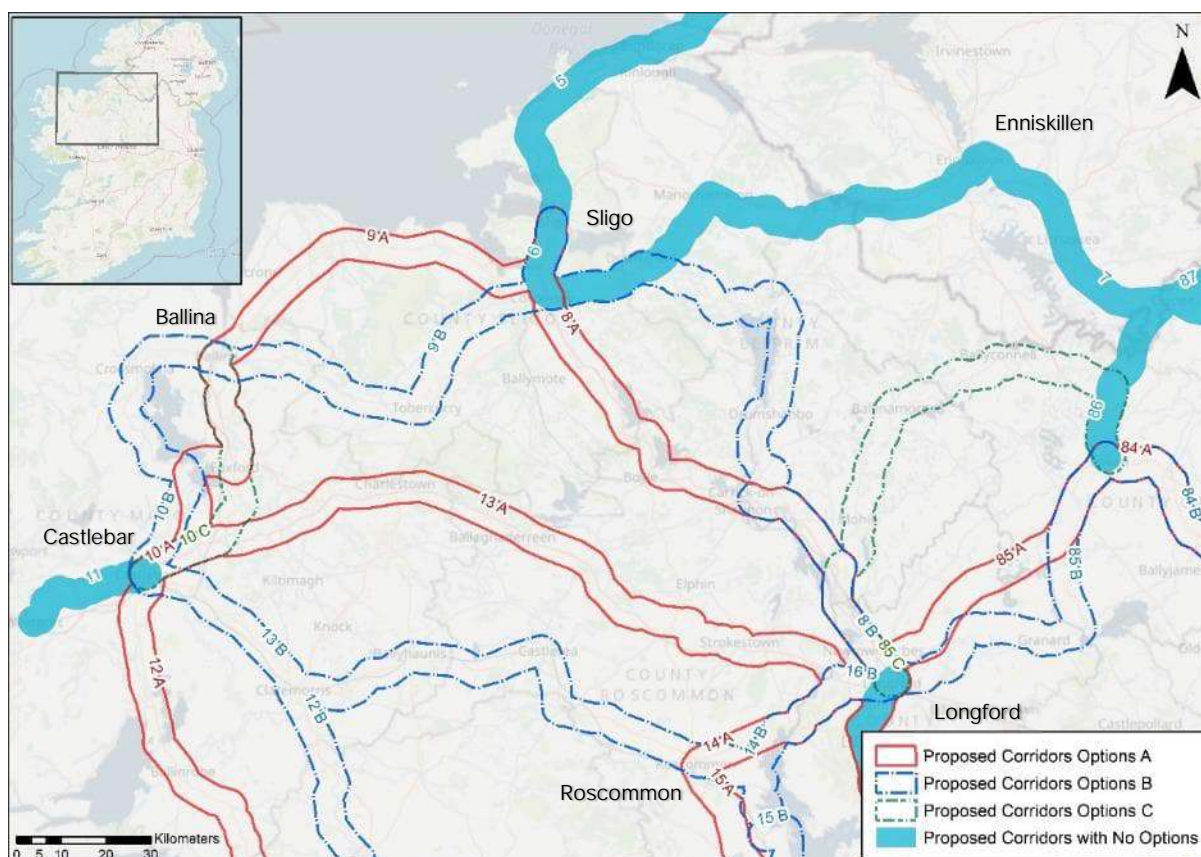


Figure E.2 : Corridor Options 6-10

### Longford to Sligo

Table E.3: Longford to Sligo

Corridor 8 - Longford to Sligo		A	B
		via Lough Arrow & Key	via Lough Allen
Demand	Commuting Trips	-1	1
	School Trips	-1	1
	Leisure Trips	0	0
Safety	Potential Safety Impacts	0	0
Integration	Integration with existing cycle infrastructure	2	-2
	Integration with planned cycling infrastructure	2	-2
	Integration with other existing alignments	-1	1
	Integration with transport modes	1	-1
	Integration with Tourist Attractions	0	0
Environment	Scenery and Route Attractiveness	0	0
Accessibility & Social inclusion	Impact on sensitive areas	0	0
	Social Inclusion	0	0
	Integration with Smaller Settlements	-1	1
	Gradients	0	0

The Longford to Sligo Corridor has two options. Option A via Lough Arrow and Lough Key and Option B via Lough Allen. The options split at Collooney and reconverge at Carrick-on-Shannon.

Option A is the preferred option due to its integration with the Collooney to Castlebaldwin Greenway along with the planned Lough Key to Carrick-On-Shannon Greenway.

## Sligo to Ballina

Table E.4: Sligo to Ballina

Corridor 9 - Sligo to Ballina		A	B
		via N59	via Tobercurry
Demand	Commuting Trips	-2	2
	School Trips	1	-1
	Leisure Trips	-1	1
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	-2	2
	Integration with planned cycling infrastructure	0	0
	Integration with other existing alignments	-2	2
	Integration with transport modes	-1	1
	Integration with Tourist Attractions	1	-1
	Scenery and Route Attractiveness	-1	1
Environment	Impact on sensitive areas	1	-1
Accessibility & Social inclusion	Social Inclusion	1	-1
	Integration with Smaller Settlements	-2	2
	Gradients	1	-1

The Sligo to Ballina Corridor has two options. Option A via N59 and Option B via Tubbercurry.

Option B is the preferred option due to its integration with smaller settlements and the existing Bellaghy - Charlestown - Collooney Greenway to Tubbercurry.

## Ballina to Castlebar

Table E.5: Ballina to Castlebar

Corridor 10 - Ballina to Castlebar		A	B	C
		via Foxford	via Crossmolina	via Foxford & N58
Demand	Commuting Trips	1	-1	1
	School Trips	0	0	0
	Leisure Trips	0	0	0
Safety	Potential Safety Impacts	2	-1	-2
Integration	Integration with existing cycle infrastructure	1	-1	1
	Integration with planned cycling infrastructure	2	-2	-2
	Integration with other existing alignments	0	0	0
	Integration with transport modes	1	-1	1
	Integration with Tourist Attractions	1	-1	1
	Scenery and Route Attractiveness	2	2	-2
Environment	Impact on sensitive areas	0	0	0
Accessibility & Social Inclusion	Social Inclusion	0	0	0
	Integration with Smaller Settlements	1	-1	1
	Gradients	0	0	0

The Ballina to Castlebar Corridor has three options, Option A via Foxford, Option B via Crossmolina and Option C via Foxford and the N58.

Option A is the preferred corridor option due to its integration with planned and existing cycling infrastructure.

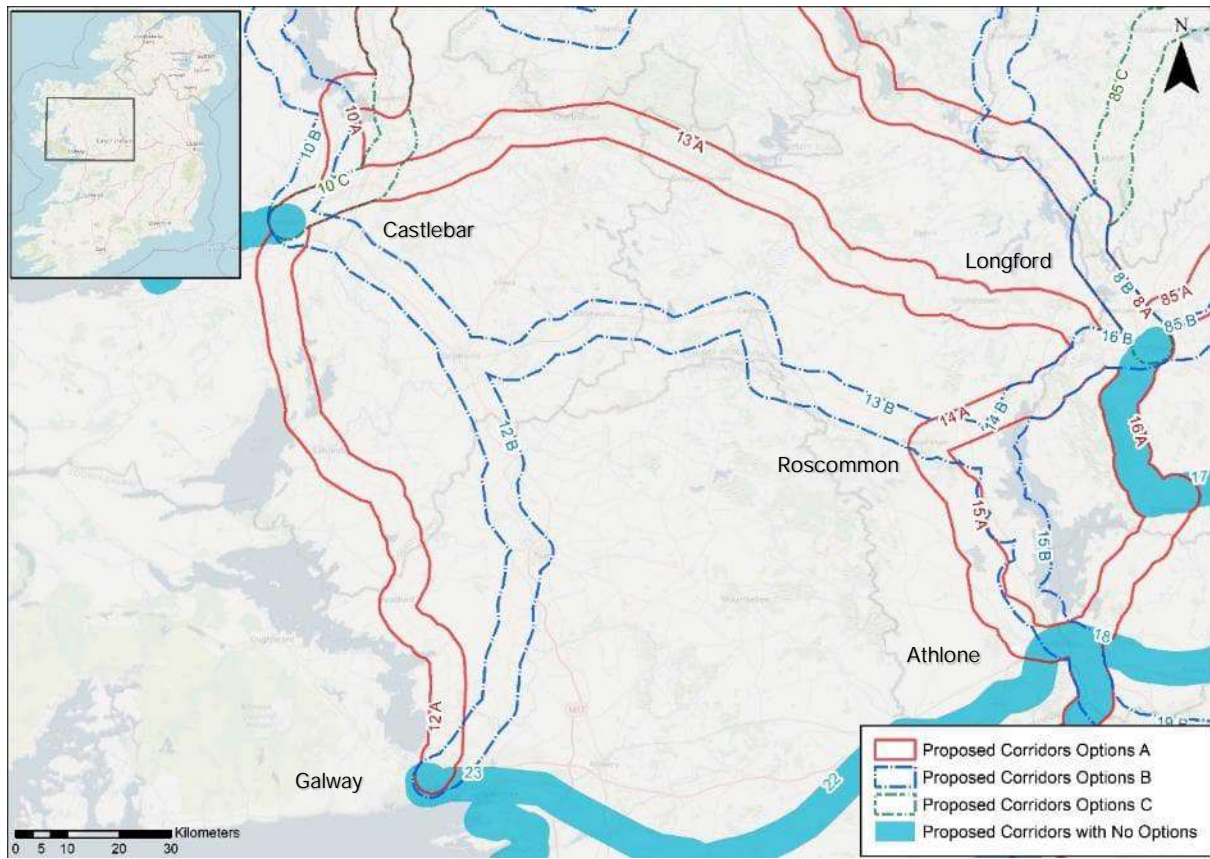


Figure E.3 : Corridor Options 12-15

## Galway to Castlebar

Table E.6: Galway to Castlebar

Corridor 12 - Galway to Castlebar		A	B
		via N84	via N17 (Galway / Castlebar)
Demand	Commuting Trips	0	0
	School Trips	-2	2
	Leisure Trips	-2	2
Safety	Potential Safety Impacts	1	-1
Integration	Integration with existing cycle infrastructure	-1	1
	Integration with planned cycling infrastructure	0	0
	Integration with other existing alignments	-1	1
	Integration with transport modes	-1	1
	Integration with Tourist Attractions	-1	1
	Scenery and Route Attractiveness	0	0
Environment	Impact on sensitive areas	0	0
Accessibility & Social inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	0	0
	Gradients	0	0

The Galway to Castlebar Corridor has two options, Option A via N84 and Option B via N17.

Option B is the preferred option due to its integration with more schools and sports facilities through Tuam and Claremorris and the existing Western Rail Corridor Greenway.

## Castlebar to Longford

Table E.7: Castlebar to Longford

Corridor 13 - Castlebar to Longford		A	B
		via N5	via N60
Demand	Commuting Trips	-2	2
	School Trips	-1	1
	Leisure Trips	-2	2
Safety	Potential Safety Impacts	1	-1
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	0	0
	Integration with other existing alignments	0	0
	Integration with transport modes	-2	2
	Integration with Tourist Attractions	-2	2
	Scenery and Route Attractiveness	0	0
Environment	Impact on sensitive areas	0	0
Accessibility & Social inclusion	Social Inclusion	2	-2
	Integration with Smaller Settlements	-2	2
	Gradients	0	0

Compared to other corridors, the two options for the Castlebar to Longford Corridor cover large and distinct areas. Option A takes a northern route through the settlements of Strokestown, Ballaghaderreen, Charlestown and Swinford (N5) while Option B takes a southern route through Roscommon, Castlereagh, Ballyhaunis and Claremorris (N60).

Option B is the preferred corridor due to its integration with tourist attractions and transport hubs.

## Roscommon to Longford

Table E.8: Roscommon to Longford

Corridor 14 - Roscommon to Longford		A	B
		via N60	southern option
Demand	Commuting Trips	0	0
	School Trips	0	0
	Leisure Trips	0	0
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	-2	2
	Integration with other existing alignments	0	0
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
	Scenery and Route Attractiveness	-2	2
Environment	Impact on sensitive areas	1	-1
Accessibility & Social inclusion	Social Inclusion	1	-1
	Integration with Smaller Settlements	0	0
	Gradients	0	0

The Roscommon to Longford Corridor has two options. Option A via N60 and Option B which extends south alongside Lough Ree.

Option B is the preferred option due to its scenery and the planned Lough Ree Greenway.

## Roscommon to Athlone

Table E.9: Roscommon to Athlone

Corridor 15 - Roscommon to Athlone		A	B
		west of N61	east of N61
Demand	Commuting Trips	0	0
	School Trips	0	0
	Leisure Trips	-1	1
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	-2	2
	Integration with other existing alignments	0	0
	Integration with transport modes	0	0
	Integration with Tourist Attractions	-1	1
Environment	Scenery and Route Attractiveness	-2	2
Accessibility & Social inclusion	Impact on sensitive areas	-1	1
	Social Inclusion	-1	1
	Integration with Smaller Settlements	0	0
	Gradients	0	0

The Roscommon to Athlone Corridor has two options. Option A lies west of the N61 while Option B lies east of the N61 alongside Lough Ree.

Option B is the preferred option due to its scenery and the planned Lough Ree Greenway - Athlone to Ballyleague / Lanesborough.

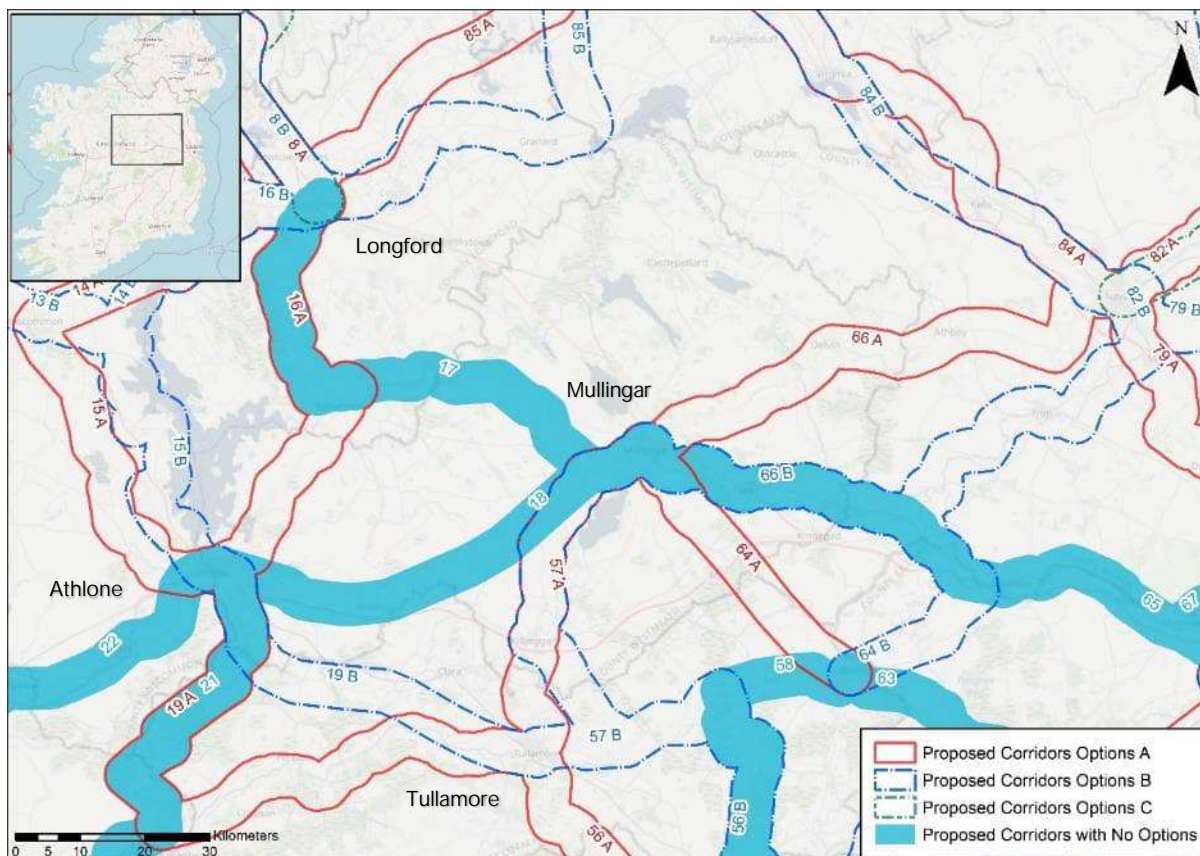


Figure E.4 : Corridor Options 16-18

Athlone to Longford

Table E.10: Athlone to Longford

Corridor 16 - Athlone to Longford		A	B
		east of Lough Ree	west of Lough Ree
Demand	Commuting Trips	0	0
	School Trips	2	-2
	Leisure Trips	-1	1
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	2	-2
	Integration with planned cycling infrastructure	-2	2
	Integration with other existing alignments	0	0
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
	Scenery and Route Attractiveness	-2	2
Environment	Impact on sensitive areas	0	0
Accessibility & Social inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	0	0
	Gradients	0	0

The Athlone to Longford Corridor has two options, Option A, East of Lough Ree and Option B, West of Lough Ree.

Option B is the preferred corridor due to its scenery and integration with the Royal Canal Greenway.



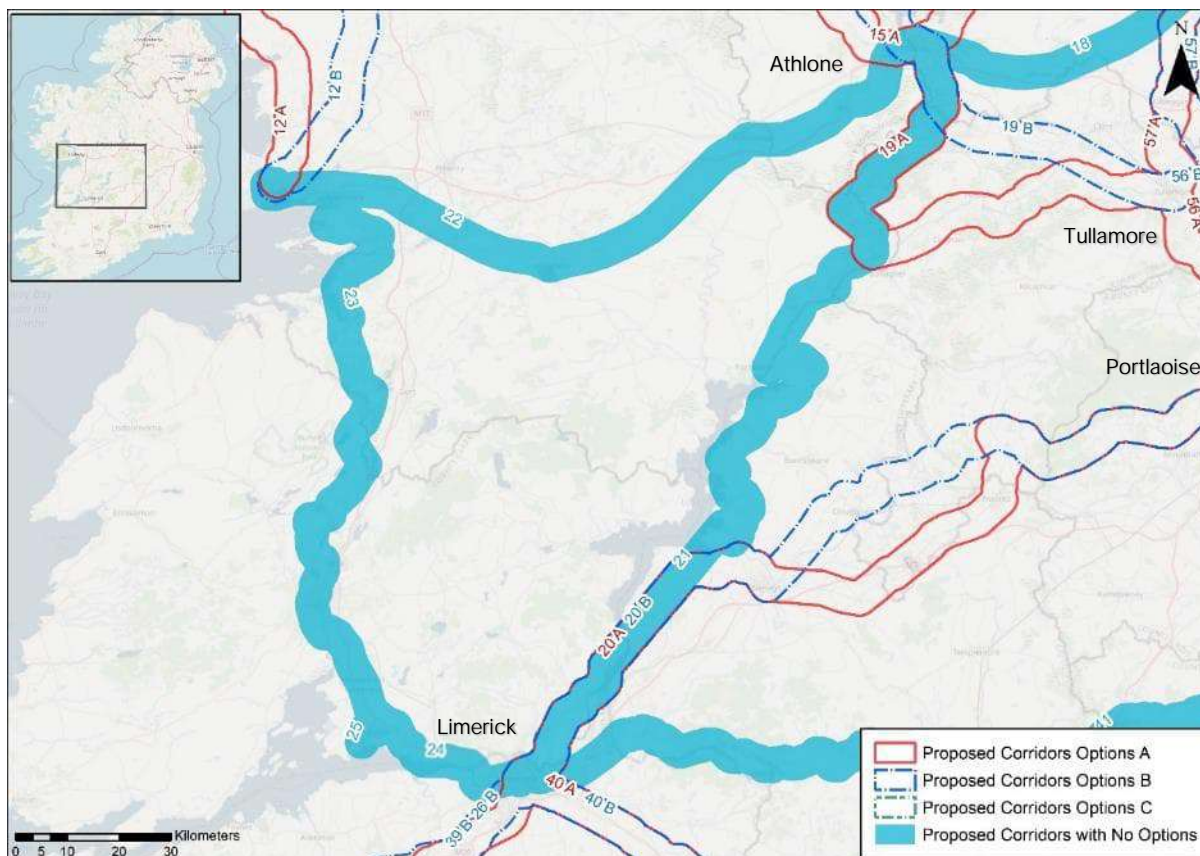


Figure E.5: Corridor Options 19-25

Athlone to Tullamore

Table E.11: Athlone to Tullamore

Corridor 19 - Athlone to Tullamore		A	B
		via Grand Canal	Northern Option
Demand	Commuting Trips	2	-2
	School Trips	1	-1
	Leisure Trips	0	0
Safety	Potential Safety Impacts	1	-1
Integration	Integration with existing cycle infrastructure	2	-2
	Integration with planned cycling infrastructure	2	-2
	Integration with other existing alignments	0	0
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
	Scenery and Route Attractiveness	2	-2
Environment	Impact on sensitive areas	-2	2
Accessibility & Social Inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	2	-2
	Gradients	0	0

Athlone to Tullamore has two options. Option A via the Royal Canal and Option B a more northern option.

Option A is the preferred corridor due to its integration with the Grand Canal greenway and further planned greenway infrastructure along its corridor.

## Limerick to Portlaoise

Table E.12: Limerick to Portlaoise

Corridor 20 - Limerick to Portlaoise		A	B
		via Roscrea	via Cloughjordan
Demand	Commuting Trips	-1	1
	School Trips	2	-2
	Leisure Trips	1	-1
Safety	Potential Safety Impacts	0	0
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	0	0
	Integration with other existing alignments	0	0
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
	Scenery and Route Attractiveness	0	0
Environment	Impact on sensitive areas	0	0
Accessibility & Social Inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	-1	1
	Gradients	0	0

The Limerick to Portlaoise Corridor has two options. Option A via Roscrea and Option B via Cloughjordan.

Option A is the preferred corridor due to serving more schools and leisure facilities through Roscrea.

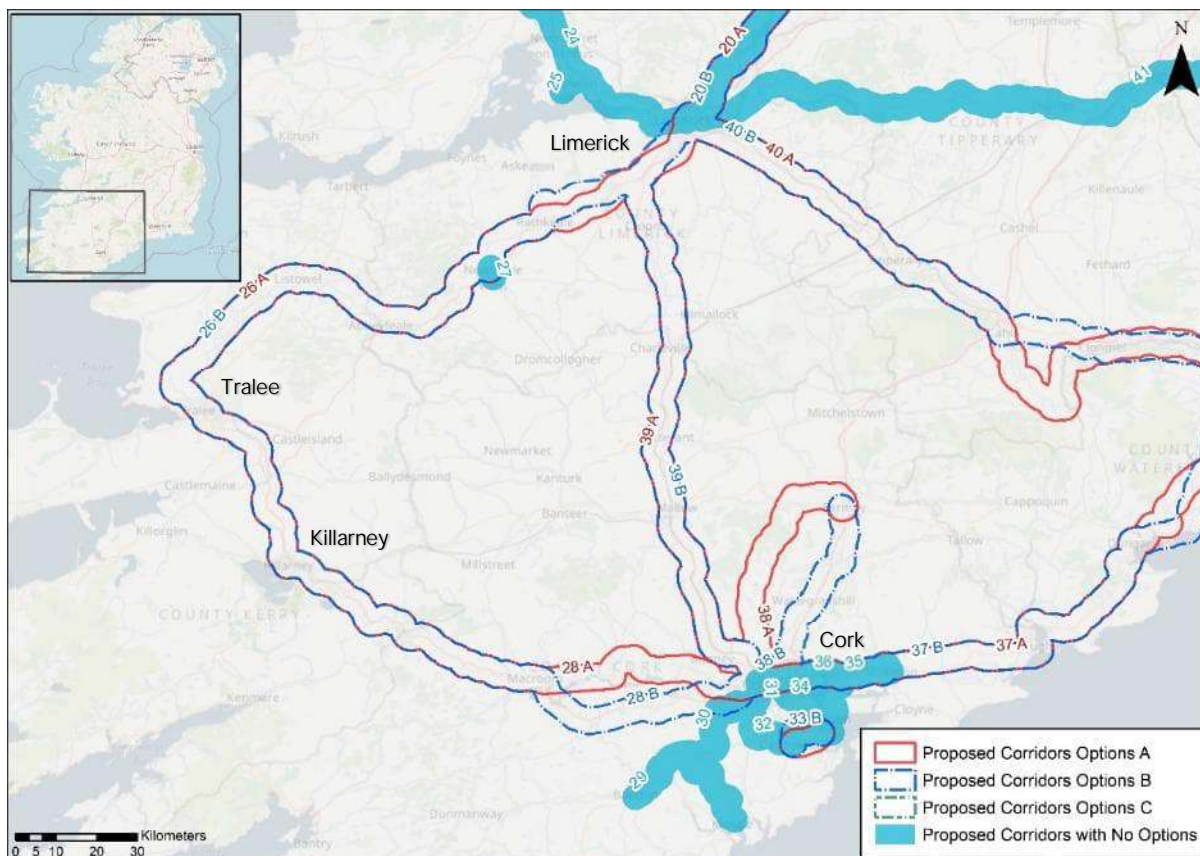


Figure E.6: Corridor Options 26-28

Tralee to Limerick

Table E.13: Tralee to Limerick

Corridor 26 - Tralee to Limerick		A	B
		via Adare	north of N21
Demand	Commuting Trips	-1	1
	School Trips	0	0
	Leisure Trips	0	0
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	0	0
	Integration with other existing alignments	-2	2
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
Environment	Scenery and Route Attractiveness	-1	1
	Impact on sensitive areas	0	0
Accessibility & Social inclusion	Social Inclusion	1	-1
	Integration with Smaller Settlements	-1	1
	Gradients	0	0

The Tralee to Limerick corridor has two options. Option A via Adare and Option B north of the N21.

Option B is the preferred corridor due its integration with other alignments.

## Cork to Tralee via Killarney

Table E.14: Cork to Tralee via Killarney

Corridor 28 - Cork to Tralee via Killarney		A	B
		north of N22	via N22
Demand	Commuting Trips	1	-1
	School Trips	-2	2
	Leisure Trips	1	-1
Safety	Potential Safety Impacts	0	0
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	0	0
	Integration with other existing alignments	-1	1
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
	Scenery and Route Attractiveness	0	0
Environment	Impact on sensitive areas	0	0
Accessibility & Social Inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	1	-1
	Gradients	0	0

The only difference between the two options for the Cork to Tralee via Killarney Corridor is the split at Cork City and the rejoining of the options near Macroom.

Option B is the preferred option due to its integration with schools.

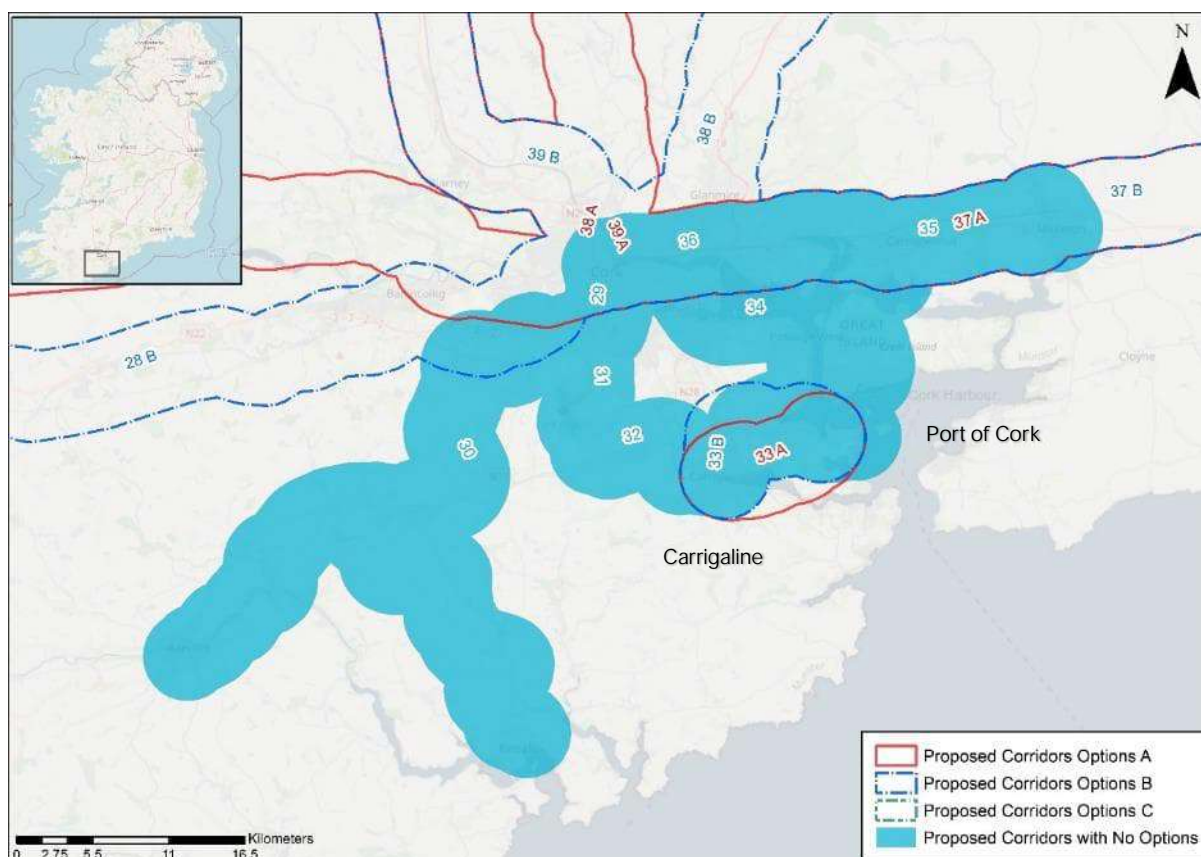


Figure E.7: Corridor Options 29-36

Port of Cork to Carrigaline

Table E.15: Port of Cork to Carrigaline

Corridor 33 - Port of Cork to Carrigaline		A	B
		via R613	via Shanbally
Demand	Commuting Trips	0	0
	School Trips	-1	1
	Leisure Trips	-1	1
Safety	Potential Safety Impacts	1	-1
Integration	Integration with existing cycle infrastructure	-2	2
	Integration with planned cycling infrastructure	-2	2
	Integration with other existing alignments	-2	2
	Integration with Future Growth	0	0
	Integration with Smaller Settlements	0	0
Tourism & Recreation	Integration with transport modes	-1	1
	Integration with Tourist Attractions	-1	1
	Scenery and Route Attractiveness	0	0
Environment	Impact on sensitive areas	0	0
Social Inclusion	Social Inclusion	0	0

The Port of Cork to Carrigaline Corridor has two options. Option A via R613 and Option B via Shanbally.

Option B is the preferred option due to alignment with the greenway around Fernhill, as well as further planned greenways in the area.

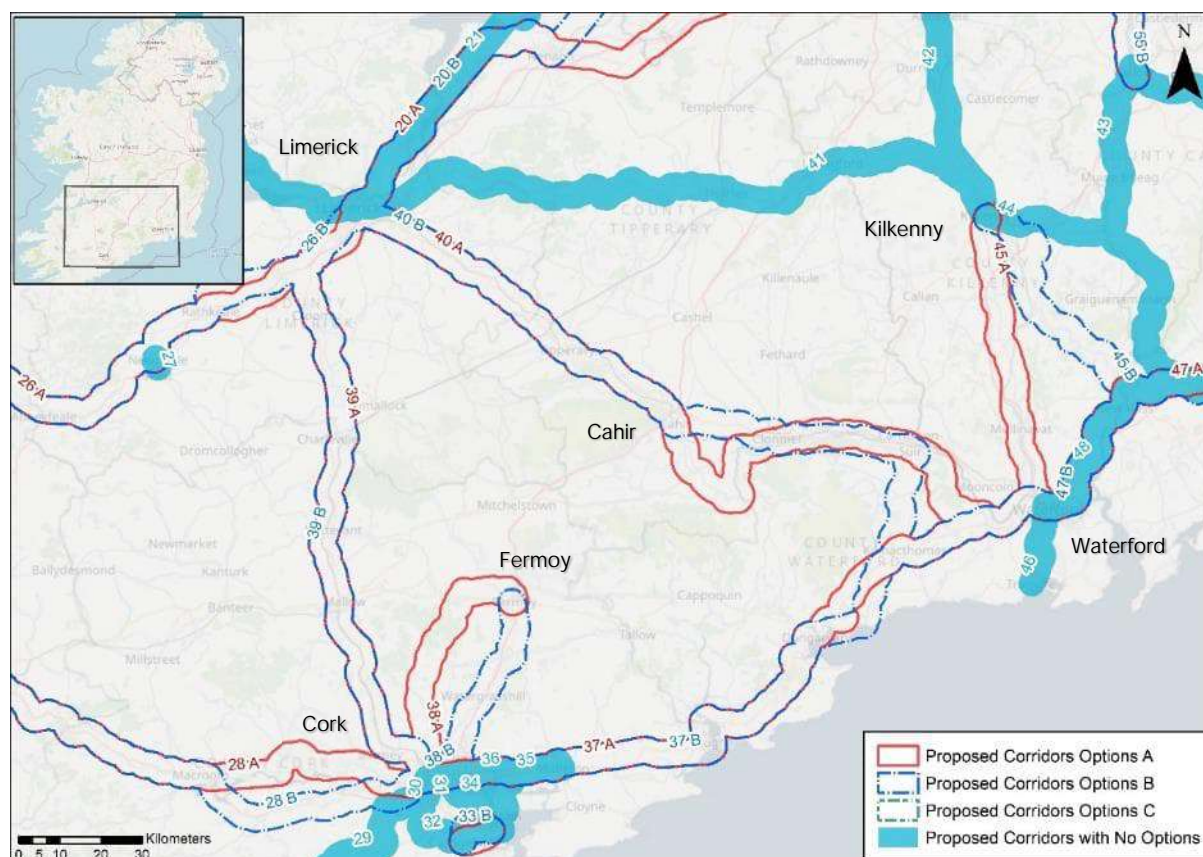


Figure E.8: Corridor Options 35-40

Cork to Waterford

Table E.16: Cork to Waterford

Corridor 37 - Cork to Waterford		A	B
		via N25	via R675
Demand	Commuting Trips	0	0
	School Trips	1	-1
	Leisure Trips	1	-1
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	-2	2
	Integration with planned cycling infrastructure	-2	2
	Integration with other existing alignments	-2	2
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
Environment	Scenery and Route Attractiveness	-1	1
Accessibility & Social Inclusion	Impact on sensitive areas	1	-1
	Social Inclusion	0	0
	Integration with Smaller Settlements	0	0
	Gradients	0	0

The Cork to Waterford Corridor Options only differ as they meet Dungarvan where they diverge before converging again before Kilmacthomas. Option A carries north of Dungarvan via N25 while Option B follows the coastal path via R675.

Option B is the preferred option due to integration with the existing "Deise" Greenway and the planned Fáilte Ireland Greenway.

## Cork to Fermoy

Table E.17: Cork to Fermoy

Corridor 38 - Cork to Fermoy		A	B
		via Carrignavar	via Watergrasshill
Demand	Commuting Trips	-1	1
	School Trips	-2	2
	Leisure Trips	-1	1
Safety	Potential Safety Impacts	1	-1
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	1	-1
	Integration with other existing alignments	-2	2
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
	Scenery and Route Attractiveness	2	-2
Environment	Impact on sensitive areas	-1	1
Accessibility & Social Inclusion	Social Inclusion	1	-1
	Integration with Smaller Settlements	-1	1
	Gradients	-2	2

The Cork to Fermoy corridor has two options, Option A via Carrignavar and Option B via Watergrasshill.

Option B is the preferred option due to its integration with the R639 and the number of facilities along its corridor.

## Limerick to Cork

Table E.18: Limerick to Cork

Corridor 39 - Limerick to Cork		A	B
		west of M7	via R526
Demand	Commuting Trips	-1	1
	School Trips	0	0
	Leisure Trips	0	0
Safety	Potential Safety Impacts	0	0
Integration	Integration with existing cycle infrastructure	-1	1
	Integration with planned cycling infrastructure	2	-2
	Integration with other existing alignments	2	-2
	Integration with transport modes	0	0
	Integration with Tourist Attractions	1	-1
	Scenery and Route Attractiveness	0	0
Environment	Impact on sensitive areas	0	0
Accessibility & Social Inclusion	Social Inclusion	1	-1
	Integration with Smaller Settlements	-1	1
	Gradients	0	0

The Limerick to Cork Corridor has two options, Option A west of the M7 and Option B via R526.

Option A is the preferred option due to The Great Southern Trail Greenway planned along its route.

## Limerick to Waterford via Cahir

Table E.19: Limerick to Waterford via Cahir

Corridor 40 - Limerick to Waterford via Cahir		A	B
		via Carrick on Suir	via R670
Demand	Commuting Trips	1	-1
	School Trips	2	-2
	Leisure Trips	1	-1
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	-2	2
	Integration with planned cycling infrastructure	2	-2
	Integration with other existing alignments	2	-2
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
	Scenery and Route Attractiveness	1	-1
Environment	Impact on sensitive areas	-2	2
Accessibility & Social inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	1	-1
	Gradients	0	0

The Limerick to Waterford has two options, Option A via Carrick-on-Suir while Option B is via N24.

Option A is the preferred option due to its integration with a planned greenway along its corridor.



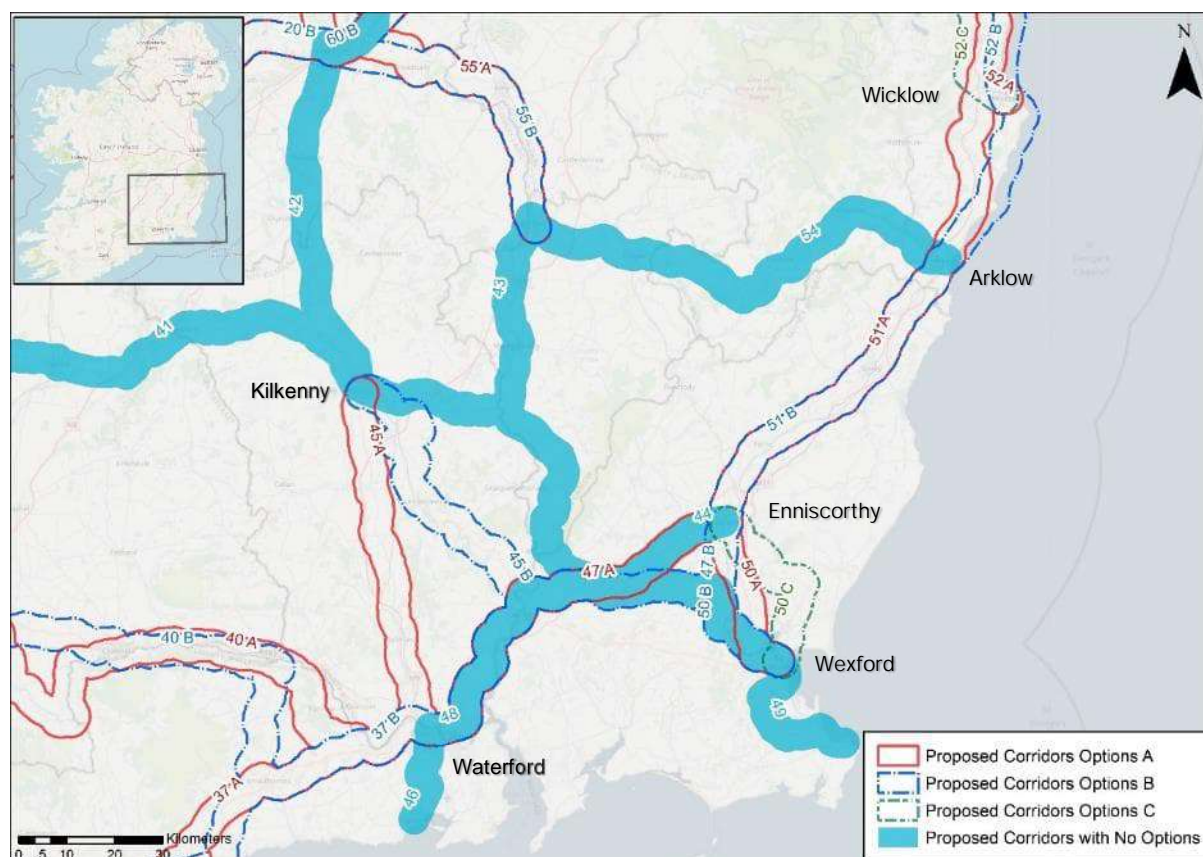


Figure E.9: Corridor Options 43-54

Kilkenny to Waterford

Table E.20: Kilkenny to Waterford

Corridor 45 - Kilkenny to Waterford		A	B
		via N10 and R713	via New Ross
Demand	Commuting Trips	-1	1
	School Trips	-1	1
	Leisure Trips	-1	1
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	0	0
	Integration with other existing alignments	-2	2
	Integration with transport modes	-1	1
	Integration with Tourist Attractions	-1	1
	Scenery and Route Attractiveness	-1	1
Environment	Impact on sensitive areas	0	0
Accessibility & Social inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	-1	1
	Gradients	0	0

The Kilkenny to Waterford Corridor has two options. Option A via N10 and R713 and Option B via New Ross.

Option A is the preferred option due to its integration with the existing alignment on the New Ross Branch historical railway line which used to be the old Waterford line.

## Enniscorthy to Waterford

Table E.21: Enniscorthy to Waterford

Corridor 47 - Enniscorthy to Waterford		A	B
		via N30	via Ballywilliam
Demand	Demand for Commuting Trips	-1	1
	School Trips	0	0
	Leisure Trips	0	0
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	0	0
	Integration with other existing alignments	-2	2
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
	Scenery and Route Attractiveness	-1	1
Environment	Impact on sensitive areas	0	0
Accessibility & Social inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	-1	1
	Gradients	0	0

The Enniscorthy to Waterford Corridor has two options, Option A via N30 and Option B via Ballywilliam. Option B is the more preferred corridor due to its integration with more smaller settlements.

## Enniscorthy to Wexford

Table E.22: Enniscorthy to Wexford

Corridor 50 - Enniscorthy to Wexford		A	B	C
		via N11	via Killurin	via Castlebridge
Demand	Commuting Trips	-2	-1	2
	School Trips	-1	-1	1
	Leisure Trips	-1	1	1
Safety	Potential Safety Impacts	-1	1	1
Integration	Integration with existing cycle infrastructure	0	0	0
	Integration with planned cycling infrastructure	2	2	-2
	Integration with other existing alignments	1	-1	-1
	Integration with transport modes	0	0	0
	Integration with Tourist Attractions	1	1	-1
	Scenery and Route Attractiveness	0	2	-2
Environment	Impact on sensitive areas	1	-1	-1
Accessibility & Social Inclusion	Social Inclusion	0	0	0
	Integration with Smaller Settlements	-2	-1	2
	Gradients	1	1	-1

The Enniscorthy to Wexford Corridor has three options. Option A runs alongside the River Slaney and the N11, Option B follows a more westerly path via Killurin and crosses the River Slaney at Cornwall whereas Option C takes a steeper route via Castlebridge.

Option B is the preferred option due to integration with the Wexford to Waterford Corridor of the NCN and therefore also aligned with proposed infrastructure of the same project.

### Enniscorthy to Wicklow via Arklow

Table E.23: Enniscorthy to Wicklow via Arklow

Corridor 51 - Enniscorthy to Wicklow via Arklow		A	B
		via R750	via coastline (Enniscorthy / Wicklow)
Demand	Commuting Trips	1	-1
	School Trips	0	0
	Leisure Trips	-1	1
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	2	-2
	Integration with other existing alignments	0	0
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
	Scenery and Route Attractiveness	-1	1
Environment	Impact on sensitive areas	2	-2
Accessibility & Social inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	1	-1
	Gradients	0	0

Option A and Option B are the same except for the segment between Wicklow and Arklow.

Option A is the preferred option due to integration with more populous settlements along its route and the Fáilte Ireland proposed a greenway along its route.

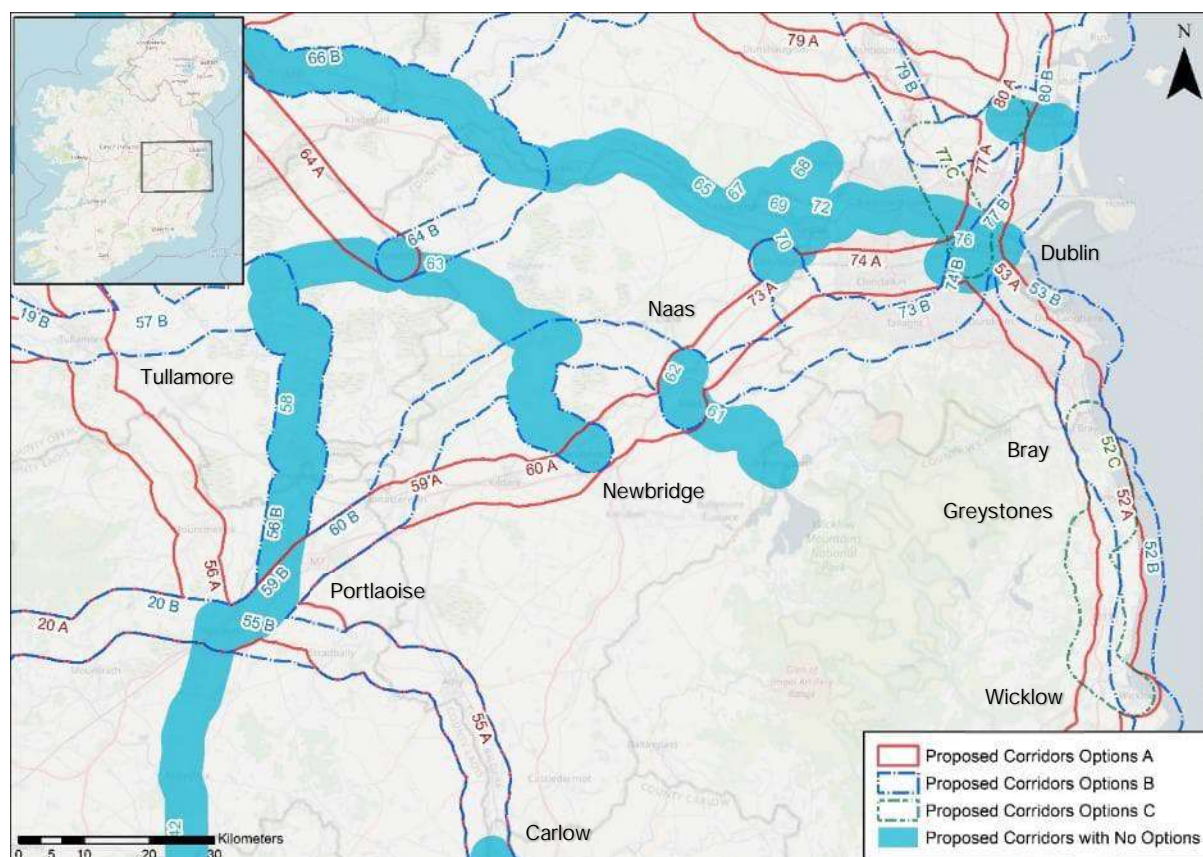


Figure E.10: Corridor Options 52-56  
Wicklow to Bray via Greystones

Table E.24: Wicklow to Bray via Greystones

Corridor 52 - Wicklow to Bray via Greystones		A	B	C
		via R761	via coastline (Wicklow / Bray)	via M11
Demand	Commuting Trips	1	-1	1
	School Trips	1	1	1
	Leisure Trips	1	2	-1
Safety	Potential Safety Impacts	1	1	-1
Integration	Integration with existing cycle infrastructure	0	0	0
	Integration with planned cycling infrastructure	-2	2	2
	Integration with other existing alignments	-1	2	1
	Integration with transport modes	-2	2	-2
	Integration with Tourist Attractions	1	-1	2
Environment	Scenery and Route Attractiveness	-1	2	-1
Accessibility & Social Inclusion	Impact on sensitive areas	2	-2	2
	Social Inclusion	0	0	0
	Integration with Smaller Settlements	1	-1	1
	Gradients	0	0	0

The Wicklow to Bray via Greystones corridor has three options, Option A via R761, Option B via the eastern coastline and Option C via M11.

Option B is the preferred option due to its coastal scenery and integration with a proposed greenway.

## Bray to Dublin

Table E.25: Bray to Dublin

Corridor 53 - Bray to Dublin		A	B
		via Stillorgan	via Dun Laoghaire
Demand	Commuting Trips	0	0
	School Trips	0	0
	Leisure Trips	-1	1
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	-1	1
	Integration with planned cycling infrastructure	-1	1
	Integration with other existing alignments	-1	1
	Integration with transport modes	-2	2
	Integration with Tourist Attractions	0	0
	Scenery and Route Attractiveness	-2	2
Environment	Impact on sensitive areas	2	-2
Accessibility & Social inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	0	0
	Gradients	2	-2

The Bray to Dublin corridor has two options, Option A via Stillorgan and Option B via Dun Laoghaire.

Option B is the more preferred option due to already comprehensive cycling infrastructure along the Dun Laoghaire to Blackrock route, planned dedicated cycling infrastructure in Sandymount on the coast road and the DART running along the corridor leading to possible mode change.

## Portlaoise to Carlow

Table E.26: Portlaoise to Carlow

Corridor 55 - Portlaoise to Carlow		A	B
		via R445	Via N80
Demand	Commuting Trips	0	0
	School Trips	0	0
	Leisure Trips	0	0
Safety	Potential Safety Impacts	1	-1
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	0	0
	Integration with other existing alignments	0	0
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
	Scenery and Route Attractiveness	1	-1
Environment	Impact on sensitive areas	0	0
Accessibility & Social inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	0	0
	Gradients	0	0

The Portlaoise to Carlow Corridor has two options, Option A via R445 and Option B via N80.

Option A is the preferred corridor due to integrating with the R445 rather than the N80 in Option B.

Tullamore to Portlaoise

Table E.27: Tullamore to Portlaoise

Corridor 56 - Tullamore to Portlaoise		A	B
		via N80	via Portarlington
Demand	Commuting Trips	2	-2
	School Trips	-1	1
	Leisure Trips	-1	1
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	-2	2
	Integration with planned cycling infrastructure	-2	2
	Integration with other existing alignments	2	-2
	Integration with transport modes	-1	1
	Integration with Tourist Attractions	-1	1
	Scenery and Route Attractiveness	0	0
Environment	Impact on sensitive areas	0	0
Accessibility & Social inclusion	Social Inclusion	1	-1
	Integration with Smaller Settlements	2	-2
	Gradients	0	0

The Tullamore to Portlaoise Corridor has two options, Option A via N80 and Option B via Portarlington.

Option B is the preferred corridor due to aligning itself with the existing Grand Canal Greenway and the proposed Fáilte Ireland greenway along the rest of its route.

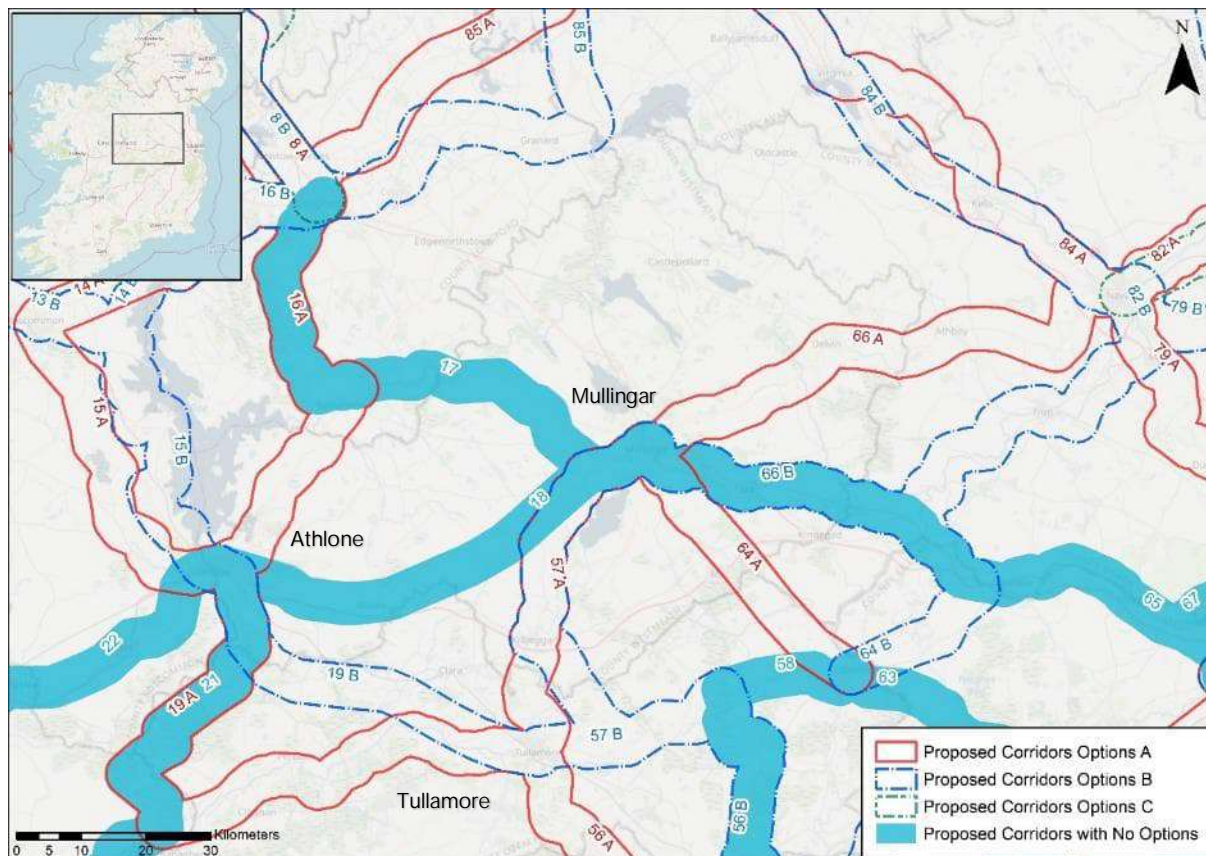


Figure E.11 : Corridor Options 57

## Mullingar to Tullamore

Table E.28: Mullingar to Tullamore

Corridor 57 - Mullingar to Tullamore		A	B
		via N52	via Ballycommon
Demand	Commuting Trips	-1	1
	School Trips	0	0
	Leisure Trips	0	0
Safety	Potential Safety Impacts	0	0
Integration	Integration with existing cycle infrastructure	-2	2
	Integration with planned cycling infrastructure	0	0
	Integration with other existing alignments	0	0
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
Environment	Scenery and Route Attractiveness	-1	1
Accessibility & Social Inclusion	Impact on sensitive areas	0	0
	Social Inclusion	0	0
	Integration with Smaller Settlements	-1	1
	Gradients	0	0

The Mullingar to Tullamore Corridor has two options, Option A via N52 and Option B via Ballycommon.

Option B is the more preferred corridor due integration with the existing Grand Canal Greenway.

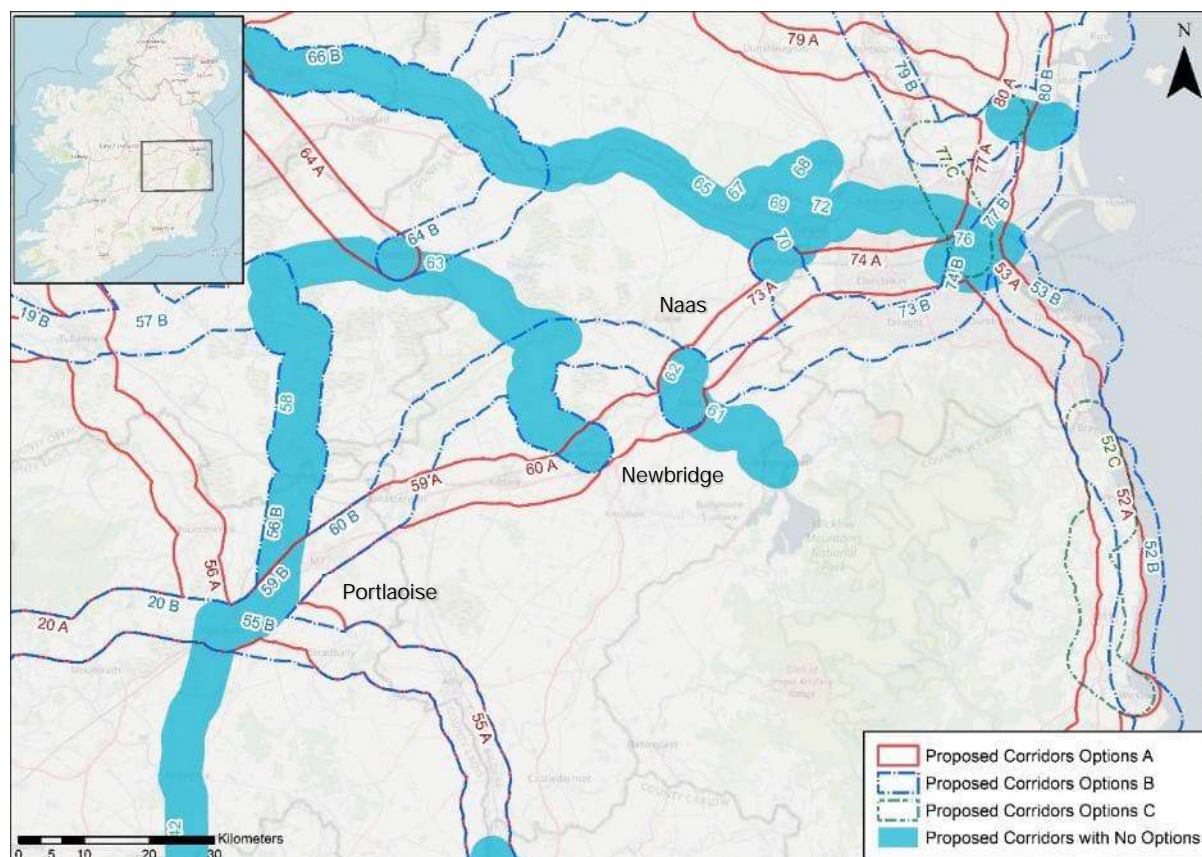


Figure E.12 : Corridor Options 58-60

## Portlaoise to Naas

Table E.29: Portlaoise to Naas

Corridor 59 - Portlaoise to Naas		A	B
		via Kildare & Newbridge	via Rathangan & Sallins
Demand	Commuting Trips	-2	2
	School Trips	1	-1
	Leisure Trips	1	-1
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	-2	2
	Integration with planned cycling infrastructure	1	-1
	Integration with other existing alignments	0	0
	Integration with transport modes	1	-1
	Integration with Tourist Attractions	1	-1
	Scenery and Route Attractiveness	0	0
Environment	Impact on sensitive areas	-1	1
Accessibility & Social Inclusion	Social Inclusion	-1	1
	Integration with Smaller Settlements	-2	2
	Gradients	0	0

The Portlaoise to Naas corridor has two options, Option A via Kildare & Newbridge and Option B via Rathangan & Sallins.

Option A is via Kildare which is a secondary node so it must be included in the network.

## Portlaoise to Newbridge

Table E.30: Portlaoise to Newbridge

Corridor 60 - Portlaoise to Newbridge		A	B
		via Kildare	via Rathangan
Demand	Commuting Trips	-2	2
	School Trips	1	-1
	Leisure Trips	0	0
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	-2	2
	Integration with other existing alignments	0	0
	Integration with transport modes	1	-1
	Integration with Tourist Attractions	1	-1
	Scenery and Route Attractiveness	-2	2
Environment	Impact on sensitive areas	0	0
Accessibility & Social Inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	-2	2
	Gradients	0	0

The Portlaoise to Newbridge Corridor has two options, Option A via Kildare and Option B via Rathangan.

Option A is via Kildare which is a secondary node so it must be included in the network.



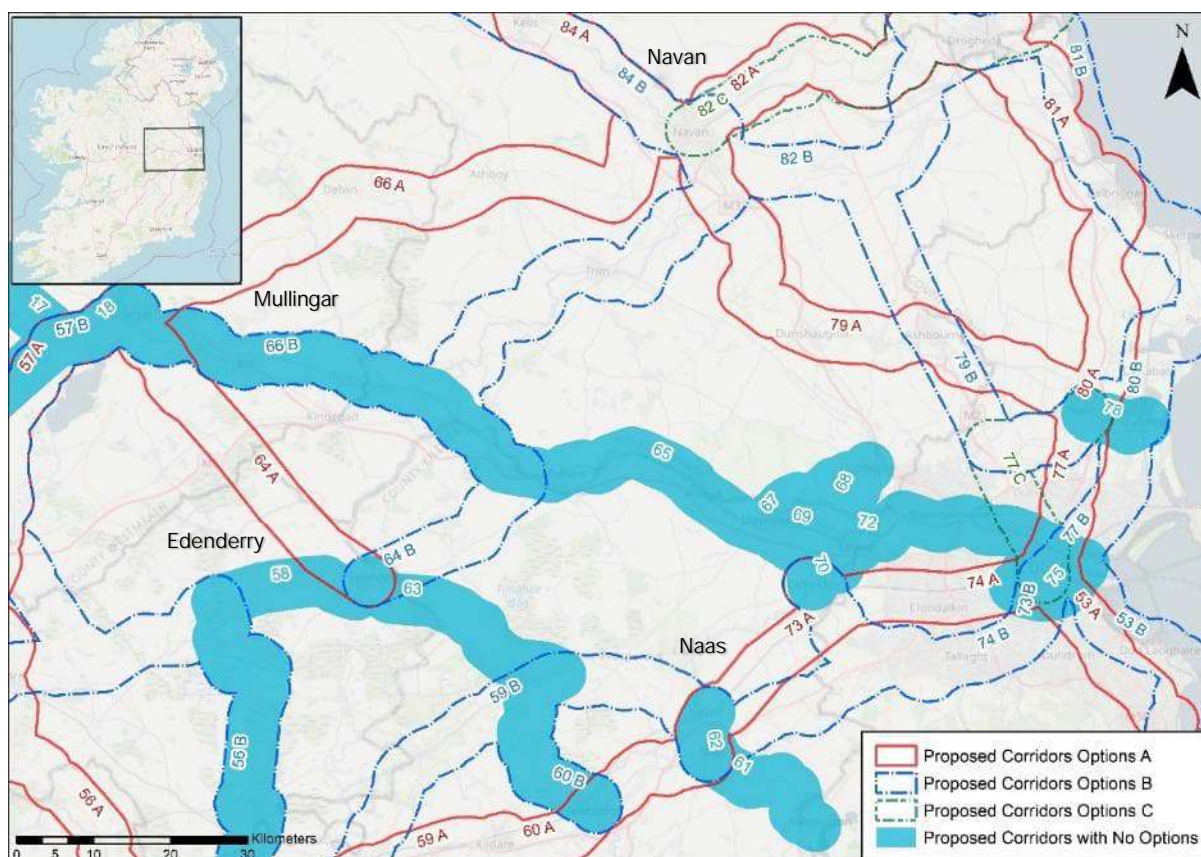


Figure E.13 : Corridor Options 61-64

Mullingar to Edenderry

Table E.31: Mullingar to Edenderry

Corridor 64 - Mullingar to Edenderry		A	B
		south of M4	via Royal Canal Greenway
Demand	Commuting Trips	-2	2
	School Trips	-2	2
	Leisure Trips	-2	2
Safety	Potential Safety Impacts	-2	2
Integration	Integration with existing cycle infrastructure	-2	2
	Integration with planned cycling infrastructure	-2	2
	Integration with other existing alignments	0	0
	Integration with transport modes	0	0
	Integration with Tourist Attractions	-1	1
	Scenery and Route Attractiveness	-2	2
Environment	Impact on sensitive areas	-1	1
Accessibility & Social Inclusion	Social Inclusion	2	-2
	Integration with Smaller Settlements	-2	2
	Gradients	0	0

The Mullingar to Edenderry corridor has two options, Option A south of M4 and Option B via Royal Greenway.

Option B is the preferred option due to its facilitation in the planned greenway link between the Royal and Grand Canal Greenways.

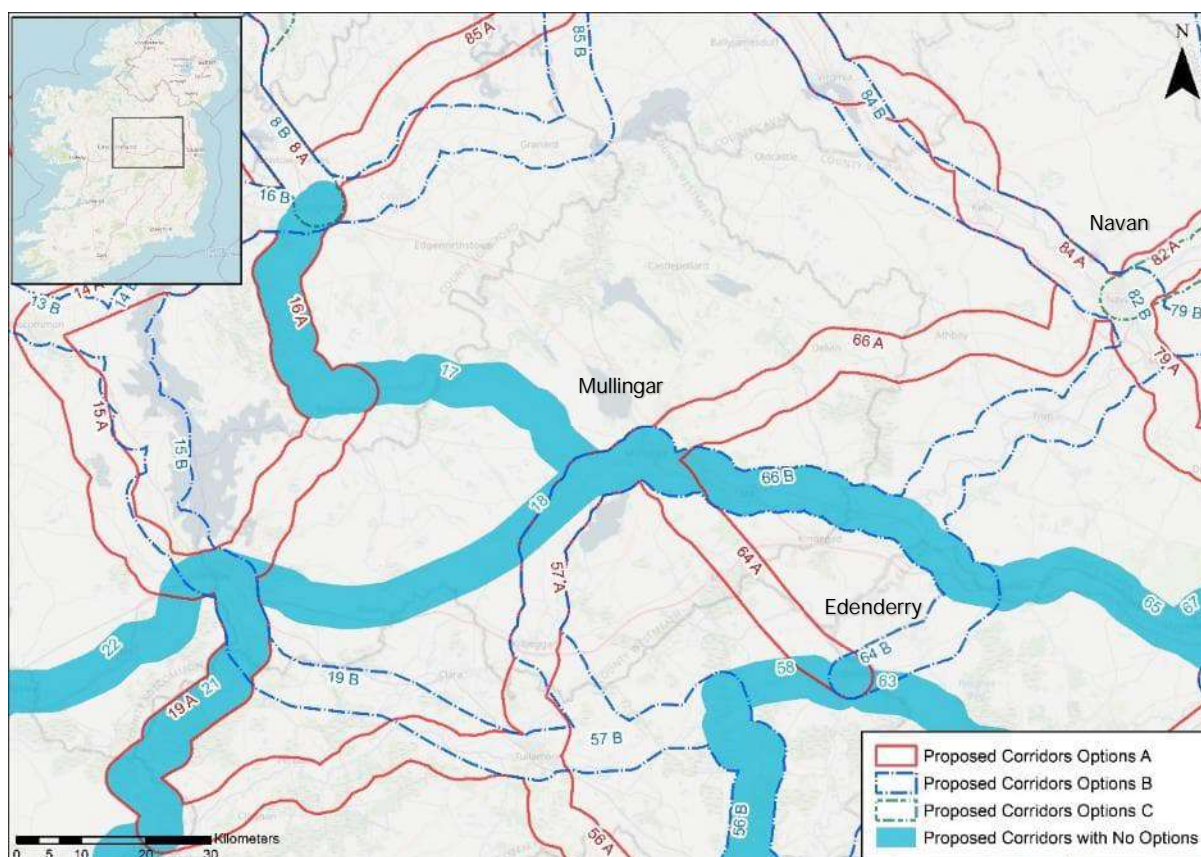


Figure E.14 : Corridor Options 65-66

Navan to Mullingar

Table E.32: Navan to Mullingar

Corridor 66 - Navan to Mullingar		A	B
		via Delvin	via Trim
Demand	Commuting Trips	1	-1
	School Trips	-1	1
	Leisure Trips	-1	1
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	-2	2
	Integration with planned cycling infrastructure	-2	2
	Integration with other existing alignments	0	0
	Integration with transport modes	0	0
	Integration with Tourist Attractions	-2	2
	Scenery and Route Attractiveness	0	0
Environment	Impact on sensitive areas	2	-2
Accessibility & Social inclusion	Social Inclusion	1	-1
	Integration with Smaller Settlements	1	-1
	Gradients	0	0

The Navan to Mullingar Corridor has two options, Option A via Delvin and Option B via Trim.

Option B is the preferred option due to Fáilte Ireland's proposed greenways and integration with the Royal Canal Greenway along its route.

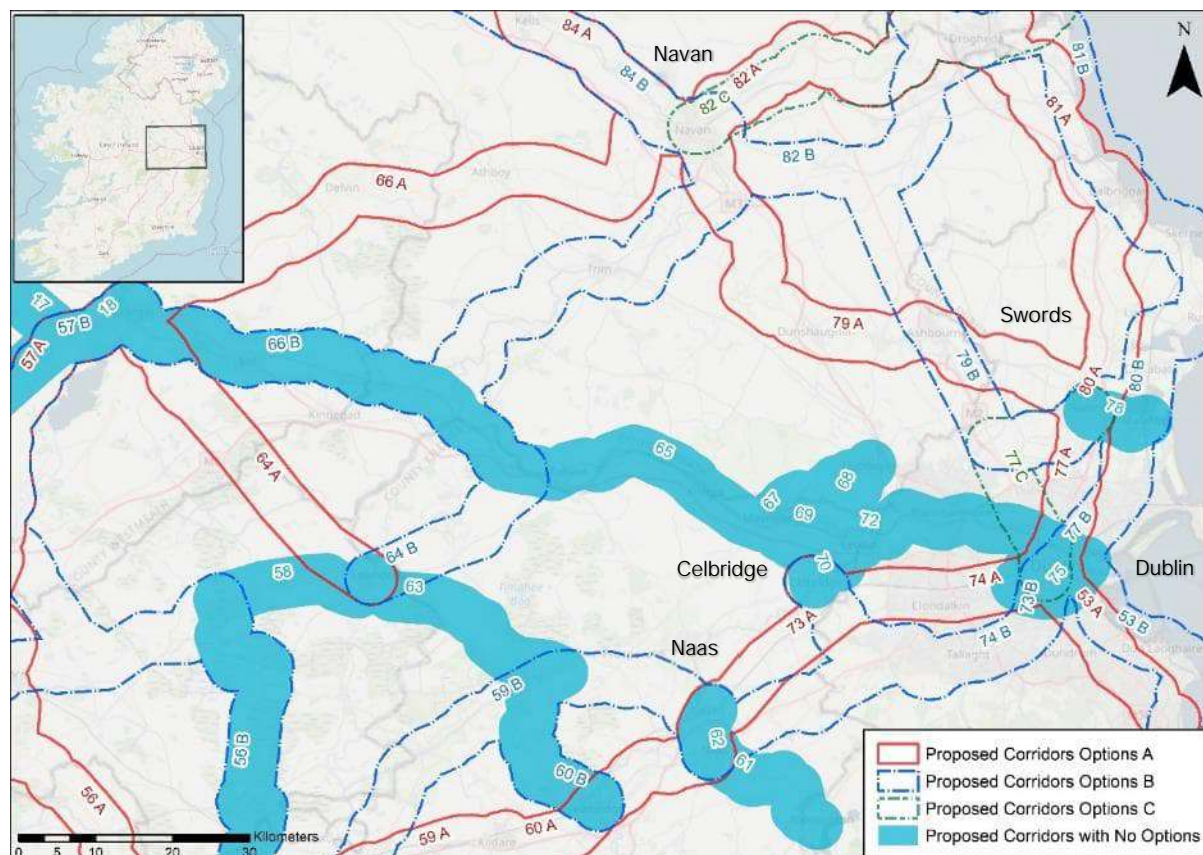


Figure E.15 : Corridor Options 73-74

### Naas to Dublin

Table E.33: Naas to Dublin

Corridor 73 - Naas to Dublin		A	B
		via Clondalkin	via Tallaght
Demand	Commuting Trips	-1	1
	School Trips	-1	1
	Leisure Trips	-1	1
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	2	-2
	Integration with planned cycling infrastructure	0	0
	Integration with other existing alignments	2	-2
	Integration with transport modes	1	-1
	Integration with Tourist Attractions	-1	1
Environment	Scenery and Route Attractiveness	2	-2
Accessibility & Social inclusion	Impact on sensitive areas	0	0
	Social Inclusion	1	-1
	Integration with Smaller Settlements	-1	1
	Gradients	0	0

The Naas to Dublin corridor has two options, Option A via Clondalkin and Option B via Tallaght.

Option A is the preferred corridor due to its integration with the Grand Canal Greenway.

## Celbridge to Dublin

Table E.34: Celbridge to Dublin

Corridor 74 - Celbridge to Dublin		A	B
		via Grand Canal	via Tallaght
Demand	Commuting Trips	-2	2
	School Trips	-2	2
	Leisure Trips	-1	1
Safety	Potential Safety Impacts	2	-2
Integration	Integration with existing cycle infrastructure	2	-2
	Integration with planned cycling infrastructure	2	-2
	Integration with other existing alignments	0	0
	Integration with transport modes	2	-2
	Integration with Tourist Attractions	-1	1
	Scenery and Route Attractiveness	2	-2
Environment	Impact on sensitive areas	0	0
Accessibility & Social inclusion	Social Inclusion	1	-1
	Integration with Smaller Settlements	-2	2
	Gradients	0	0

The Celbridge to Dublin Corridor has two options, Option A via the Grand Canal and Option B via Tallaght.

Option A is the preferred corridor due to its integration with the Grand Canal Greenway.

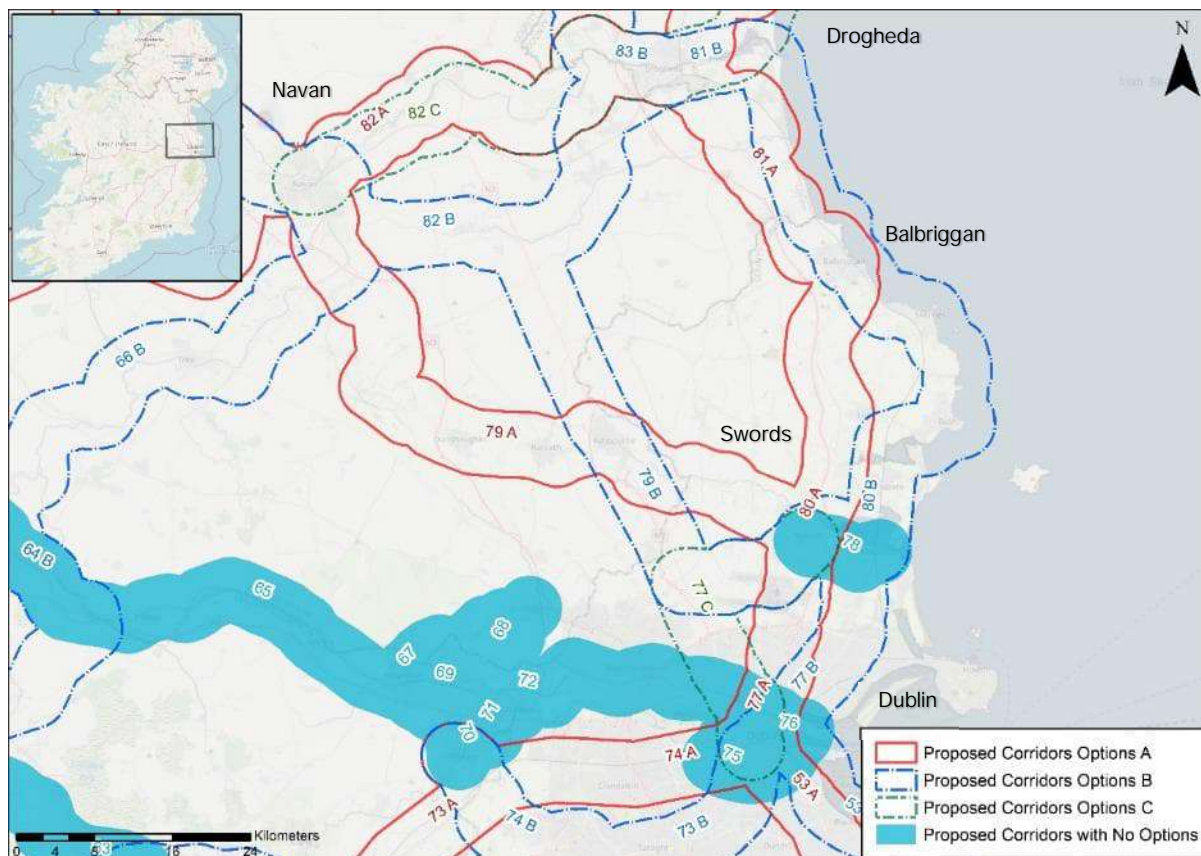


Figure E.16 : Corridor Options 76-82

Swords to Dublin

Table E.35: Swords to Dublin

Corridor 77 - Swords to Dublin		A	B	C
		via R132	via R107	via R135
Demand	Commuting Trips	-2	2	-2
	School Trips	-2	2	1
	Leisure Trips	0	0	0
Safety	Potential Safety Impacts	1	1	-1
Integration	Integration with existing cycle infrastructure	0	0	0
	Integration with planned cycling infrastructure	0	0	0
	Integration with other existing alignments	0	0	0
	Integration with transport modes	-2	2	-2
	Integration with Tourist Attractions	0	0	0
Environment	Scenery and Route Attractiveness	-1	1	-1
Accessibility & Social inclusion	Impact on sensitive areas	0	0	0
	Social Inclusion	-1	-1	1
	Integration with Smaller Settlements	-2	2	-2
	Gradients	0	0	0

The Swords to Dublin corridor has three options, Option A via R132, Option B via R107 and Option C via R135.

Option B is the preferred corridor due to its integration with the DART line.

## Navan to Swords

Table E.36: Navan to Swords

Corridor 79 - Navan to Swords		A	B
		via Ratoath	via N2
Demand	Commuting Trips	2	-2
	School Trips	1	-1
	Leisure Trips	1	-1
Safety	Potential Safety Impacts	0	0
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	0	0
	Integration with other existing alignments	0	0
	Integration with transport modes	0	0
	Integration with Tourist Attractions	-1	1
	Scenery and Route Attractiveness	1	-1
Environment	Impact on sensitive areas	-1	1
Accessibility & Social Inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	2	-2
	Gradients	0	0

The Navan to Swords Corridor has two options, Option A via Ratoath and Option B via N2.

Option A is the preferred corridor due to serving local communities with more schools and sports facilities along its route.

## Balbriggan to Swords

Table E.37: Balbriggan to Swords

Corridor 80 - Balbriggan to Swords		A	B
		via R132	via coastline
Demand	Commuting Trips	-2	2
	School Trips	-2	2
	Leisure Trips	-2	2
Safety	Potential Safety Impacts	-2	2
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	-1	1
	Integration with other existing alignments	1	-1
	Integration with transport modes	-2	2
	Integration with Tourist Attractions	-2	2
	Scenery and Route Attractiveness	-2	2
Environment	Impact on sensitive areas	2	-2
Accessibility & Social Inclusion	Social Inclusion	1	-1
	Integration with Smaller Settlements	-2	2
	Gradients	0	0

The Balbriggan to Swords Corridor has two options, Option A via R132 and Option B via the coastline.

Option B is the preferred option due to its higher population catchment and coastal route.

## Drogheda to Balbriggan

Table E.38: Drogheda to Balbriggan

Corridor 81 - Drogheda to Balbriggan		A	B
		via R132	via coastline
Demand	Commuting Trips	2	-2
	School Trips	-1	1
	Leisure Trips	1	-1
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	-1	1
	Integration with other existing alignments	1	-1
	Integration with transport modes	0	0
	Integration with Tourist Attractions	-1	1
	Scenery and Route Attractiveness	-2	2
Environment	Impact on sensitive areas	2	-2
Accessibility & Social Inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	2	-2
	Gradients	0	0

The Drogheda to Balbriggan Corridor has two options, Option A via R132 and Option B via the coastline.

Option B is the preferred option due to its scenery via the eastern coastline.

## Navan to Drogheda

Table E.39: Navan to Drogheda

Corridor 82 - Navan to Drogheda		A	B	C
		along Boyne River	via Duleek	via L1600
Demand	Commuting Trips	-1	1	-1
	School Trips	1	-1	1
	Leisure Trips	-1	1	-1
Safety	Potential Safety Impacts	1	-1	-1
Integration	Integration with existing cycle infrastructure	2	-2	2
	Integration with planned cycling infrastructure	2	-2	-2
	Integration with other existing alignments	0	0	0
	Integration with transport modes	0	0	0
	Integration with Tourist Attractions	1	-1	1
	Scenery and Route Attractiveness	2	-1	1
Environment	Impact on sensitive areas	-2	2	-2
Accessibility & Social Inclusion	Social Inclusion	0	0	0
	Integration with Smaller Settlements	-1	1	-1
	Gradients	0	0	0

The Navan to Drogheda Corridor has three Options. Option A along Boyne River, Option B via Duleek and Option C via L1600.

Option A is the preferred option due to its integration with the existing greenway and planned TII Boyne Greenway and Navigation Scheme.

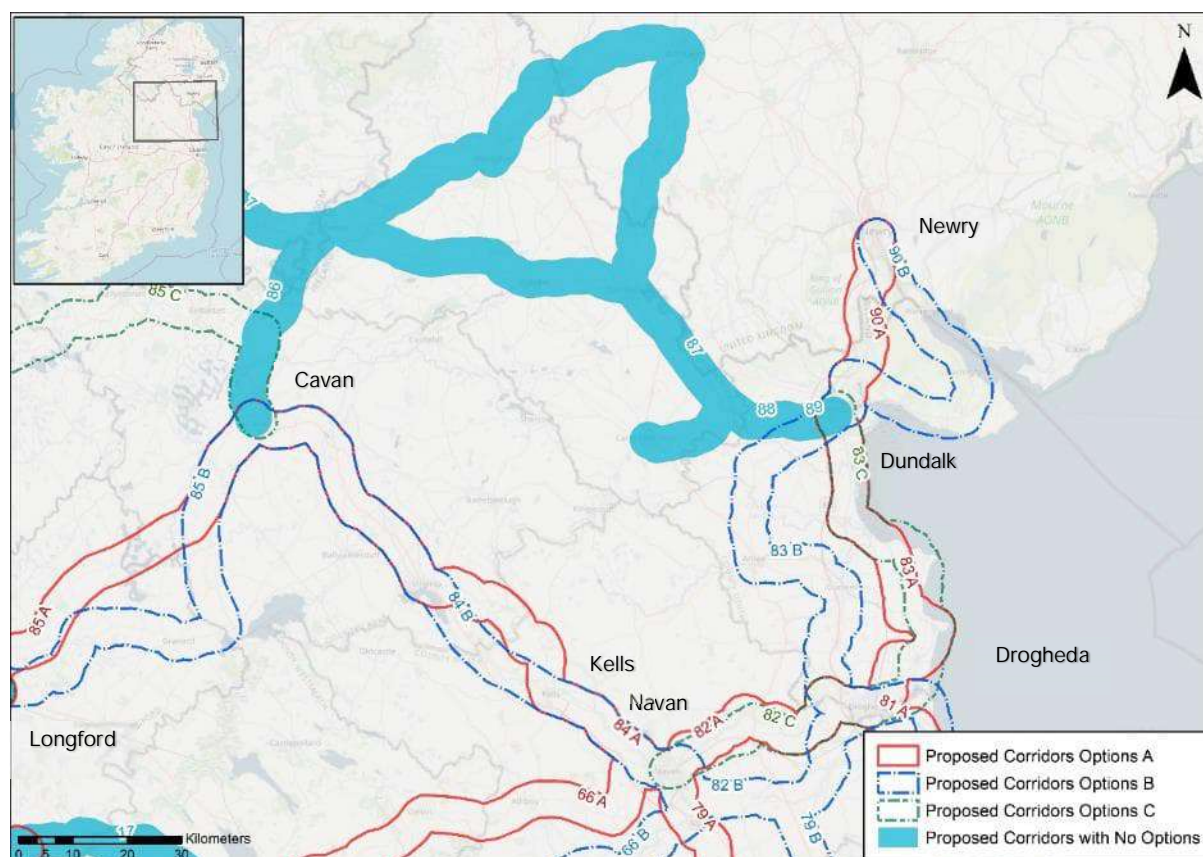


Figure E.17 : Corridor Options 83-90

Dundalk to Drogheda

Table E.40: Dundalk to Drogheda

Corridor 83 - Dundalk to Drogheda		A	B	C
		via R166	via Ardee	via coastline
Demand	Commuting Trips	-1	1	-1
	School Trips	-1	1	-1
	Leisure Trips	0	0	0
Safety	Potential Safety Impacts	-1	-1	1
Integration	Integration with existing cycle infrastructure	0	0	0
	Integration with planned cycling infrastructure	1	-1	1
	Integration with other existing alignments	0	0	0
	Integration with transport modes	-1	1	-1
	Integration with Tourist Attractions	1	-1	1
Environment	Scenery and Route Attractiveness	1	-2	2
Accessibility & Social Inclusion	Impact on sensitive areas	0	0	0
	Social Inclusion	0	0	0
	Integration with Smaller Settlements	-1	1	-1
	Gradients	0	0	0

Option A and C are similar corridors along the east coast of Ireland whereas Option B is an inland corridor via Ardee.

Option C is the preferred option due to it passing through numerous beaches and coastal destinations along its cycleway.



## Cavan to Navan via Kells

Table E.41: Cavan to Navan via Kells

Corridor 84 - Cavan to Navan via Kells		A	B
		via Mullagh	via N3
Demand	Commuting Trips	2	-2
	School Trips	0	0
	Leisure Trips	0	0
Safety	Potential Safety Impacts	1	-1
Integration	Integration with existing cycle infrastructure	0	0
	Integration with planned cycling infrastructure	0	0
	Integration with other existing alignments	-1	1
	Integration with transport modes	0	0
	Integration with Tourist Attractions	0	0
	Scenery and Route Attractiveness	1	-1
Environment	Impact on sensitive areas	1	-1
Accessibility & Social inclusion	Social Inclusion	0	0
	Integration with Smaller Settlements	2	-2
	Gradients	0	0

As the two options go through a similar area and only diverge for a short distance, there is relatively little difference between Options A, via Mullagh and B, via N3.

Option A is the preferred option due to its high population catchment along its route.

## Longford to Cavan

Table E.42: Longford to Cavan

Corridor 85 - Longford to Cavan		A	B	C
		via Gowna	via Granard	via N4
Demand	Commuting Trips	-2	-2	2
	School Trips	-2	1	2
	Leisure Trips	-2	1	2
Safety	Potential Safety Impacts	0	0	0
Integration	Integration with existing cycle infrastructure	0	0	0
	Integration with planned cycling infrastructure	-2	1	2
	Integration with other existing alignments	-2	1	2
	Integration with transport modes	-1	-1	1
	Integration with Tourist Attractions	-2	-2	2
	Scenery and Route Attractiveness	0	0	0
Environment	Impact on sensitive areas	2	2	-2
Accessibility & Social inclusion	Social Inclusion	1	-1	-1
	Integration with Smaller Settlements	-2	-2	2
	Gradients	0	0	0

The Longford to Cavan Corridor has three options. Option A via Gowna, Option B via Granard and Option C via N4.

Option C is the preferred option due to its integration with local communities.

## Newry to Dundalk

Table E.43: Newry to Dundalk

Corridor 90 - Newry to Dundalk		A	B
		via N1	via Carlingford
Demand	Commuting Trips	-2	2
	School Trips	-1	1
	Leisure Trips	-1	1
Safety	Potential Safety Impacts	-1	1
Integration	Integration with existing cycle infrastructure	-1	1
	Integration with planned cycling infrastructure	-2	2
	Integration with other existing alignments	0	0
	Integration with transport modes	1	-1
	Integration with Tourist Attractions	-2	2
	Scenery and Route Attractiveness	-2	2
Environment	Impact on sensitive areas	2	-2
Accessibility & Social inclusion	Social Inclusion	1	-1
	Integration with Smaller Settlements	-2	2
	Gradients	0	0

The Newry to Dundalk corridor has two options, Option A via N1 and Option B, via Carlingford.

Option B is the preferred option due to its existing alignments, scenery and route attractiveness.

Appendix F

# SEA Screening Report

# National Cycle Network Plan

Strategic Environmental Assessment (SEA)  
Screening Report

November 2021

## Quality information

<u>Prepared by</u>	<u>Checked by</u>	<u>Verified by</u>	<u>Approved by</u>
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## Revision History

<u>Revision</u>	<u>Revision date</u>	<u>Details</u>	<u>Authorized</u>	<u>Name</u>	<u>Position</u>
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# 1. Introduction

## Purpose of this SEA Screening Report

- 1.1 This Strategic Environmental Assessment (SEA) Screening Report has been prepared in relation to the National Cycle Network Plan by AECOM.
- 1.2 The purpose of the Screening Report is to set out a screening opinion with regards to whether a full SEA process is required to accompany the development of the National Cycle Network Plan. The screening opinion is to be presented to the statutory consultation bodies for SEA, the Environmental Protection Agency (EPA) and the Minister for the Environment, Climate and Communications for their comment.

## Strategic Environmental Assessment and screening

- 1.3 Directive 2001/42/EC 'The SEA Directive' requires certain plans and programmes to undergo a SEA process. An SEA is the formal, systematic evaluation of the likely significant environmental effects of implementing a plan or programme, or variation to a plan or programme before a decision is made to adopt it.
- 1.4 The requirement for SEA in Ireland was introduced by European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. 435 of 2004) and The Planning and Development Strategic Environmental Assessment (SEA) Regulations 2004 (S.I. 436 of 2004). These Regulations have since been amended by the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 (S.I. No. 200 of 2011) and the Planning and Development (SEA) (Amendment) Regulations 2011 (S.I. No. 201 of 2011). These transposed the SEA Directive into Irish law.
- 1.5 Section 9 (4) of SI No. 435/2004 requires the screening of individual plans or programmes, based on the criteria in Schedule 1 of the SEA Regulations, which will support a determination as to whether or not significant effects on the environment would be likely to arise.

## Structure of this SEA Screening Report

- 1.6 This Screening Report provides a screening opinion as to whether the National Cycle Network Plan is likely to lead to significant environment effects, and as such requires an SEA process. In this context it presents the following:
  - Details and context of the National Cycle Network Plan, including its scope and likely content, its relationship with national, regional and local plans and strategies and the key environmental constraints in the vicinity of the areas affected by the National Cycle Network Plan (**Chapter 2**)
  - A discussion of the potential significant environmental effects of the National Cycle Network Plan and their significance (**Chapter 3**); and
  - A summary of the screening opinion (**Chapter 4**).



## 2. Overview of the National Cycle Network Plan

### The National Cycle Network Plan

- 2.1 Transport Infrastructure Ireland (TII) are currently working with key stakeholders to prepare a new National Cycle Network (NCN) Plan. This will map existing cycling infrastructure and identify gaps where future investment could be focused in order to establish a comprehensive and connected cycling network around Ireland.
- 2.2 The NCN Plan will focus on the inter-urban network with a priority on connectivity between urban areas of 5,000+ population, as well as to strategic destinations outside of urban areas (including transport hubs, centres of education, centres of employment, leisure destinations, and tourist destinations). It will aim to maximise the number of users and encourage modal shift. Where possible, the network will also optimise the potential for daily activities via active travel (e.g. school and work commutes) and integrate with existing and proposed active travel infrastructure.
- 2.3 The plan continues the previous work of TII's National Cycle Network Scoping Study (2010) which proposed a high-level route corridor connecting urban centres of 10,000+ population. It also aligns with the ongoing work of the National Transport Authority (NTA) in developing urban cycle networks in areas of 5,000+ population. As such, the NCN Plan aims to compliment the various active travel infrastructure projects currently under development, and in planning, by providing a core spine that other networks and routes can connect to and expand upon.
- 2.4 The vision for the NCN Plan is as follows:

*Develop a safe, connected, and inviting cycle network between urban areas and key destinations to achieve accessible, sustainable, and high-quality routes that will help to reduce the carbon impact of transport and promote a healthy and inclusive society.*

### Scope / geographical coverage of the NCN Plan

- 2.5 The NCN Plan will set out a proposed national cycle network connecting settlements with 5,000 inhabitants or more along identified corridors (**Figure 2.1**). It will also seek to connect key strategic destinations, (e.g. top tourist attractions, transport hubs, centres of education, centres of employment and others).
- 2.6 The likely corridors identified through the NCN Plan will mainly cover non-urban areas. This is given urban cycle networks are being covered by work currently being undertaken by the NTA.
- 2.7 Whilst the NCN Plan will not include specific or detailed routes, it will identify broad corridors through which interventions should be targeted. These identified corridors will be accompanied by recommendations relating to the level of infrastructure required along specific corridors or sections of corridor (e.g. segregated cycle path).

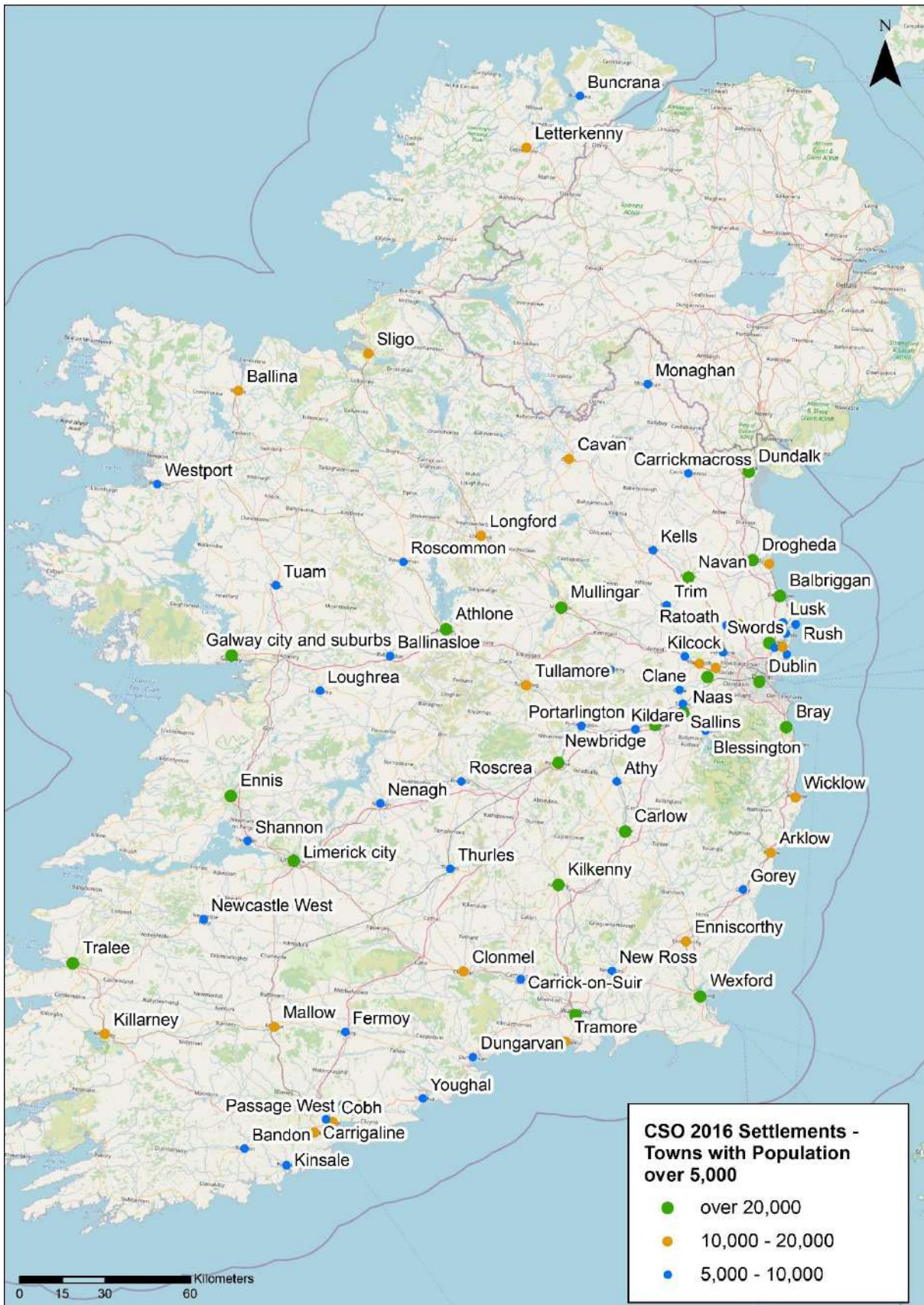


Figure 2.1: Settlements of over 5,000 inhabitants in the Republic of Ireland

## Wider policy framework associated with the NCN Plan

- 2.8 The National Development Plan 2021-2030 highlights that the NCN Plan will provide a framework for a comprehensive and connecting cycling network and serve to inform future planning and project delivery decisions in relation to walking and cycling infrastructure. In this respect the National Development Plan highlights that it will be a valuable resource in relation to active travel connectivity around Ireland.
- 2.9 The NCN Plan is also being prepared in close conjunction with the NTA's various initiatives on local cycle networks and in association with the provisions of the following:
- National Planning Framework (NPF);
  - Common Appraisal Framework (CAF);
  - National Investment Framework for Transportation in Ireland (NIFTI);
  - Regional Spatial and Economic Strategies (RSES);
  - Road Safety Standards (RSS);
  - Safe Routes to School (SRTS); and
  - Public Spending Code (PSC).
- 2.10 The NCN Plan is not specifically required by legislative, regulatory or administrative provisions. It is however being progressed as a key component of the development of a National Cycle Network in Ireland.

## Key environmental constraints potentially affected by the NCN Plan

- 2.11 As highlighted above, the NCN Plan will focus on key inter-urban routes. Whilst still to be determined, the corridors to be identified have the potential to pass through or close to key environmental designations in Ireland, focus on sensitive locations such as disused railway lines and canal corridors, and affect key habitats such as bogs or heathlands.
- 2.12 The designations with the potential to be affected include: National Parks; Special Areas of Conservation, Special Protection Areas and Ramsar sites; and Natural Heritage Areas. They also have the potential to affect features recorded on the Site and Monuments Record and National Inventory of Architectural Heritage.

## 3. Screening determination

### Screening criteria

- 3.1 Schedule 1 of S.I. No. 435/2004 - European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (as amended) sets out the criteria for determining the likely significant effects of implementing the plan on the environment. The criteria are based on those set out in Annex II of the SEA Directive.
- 3.2 These criteria are as follows:
1. The characteristics of the plan or programme, or modification to a plan or programme, having regard, in particular, to:
    - the degree to which the plan or programme, or modification to a plan or programme, sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources;
    - the degree to which the plan or programme, or modification to a plan or programme, influences other plans including those in a hierarchy;
    - the relevance of the plan or programme, or modification to a plan or programme, for the integration of environmental considerations in particular with a view to promoting sustainable development;
    - environmental problems relevant to the plan or programme, or modification to a plan or programme; and
    - the relevance of the plan or programme, or modification to a plan or programme, for the implementation of European Union legislation on the environment (e.g. plans and programmes linked to waste management or water protection).
  2. Characteristics of the effects and of the area likely to be affected, having regard, in particular, to:
    - the probability, duration, frequency and reversibility of the effects;
    - the cumulative nature of the effects;
    - the transboundary nature of the effects;
    - the risks to human health or the environment (e.g. due to accidents);
    - the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected);
    - the value and vulnerability of the area likely to be affected due to:
      - (a) special natural characteristics or cultural heritage,
      - (b) exceeded environmental quality standards or limit values,
      - (c) intensive land-use; and
    - the effects on areas or landscapes which have a recognised national, European Union or international protection status.
- 3.3 The following section of this Screening Report therefore assesses the proposed NCN Plan against the criteria set out above.

## Screening assessment

3.4 **Table 3.1** and **Table 3.2** below presents the screening assessment using the criteria for determining the likely significance of effects as set out in the Annex II of the SEA Directive and Schedule 1 of the SEA Regulations.

**Table 3.1: Screening assessment relating to Schedule 1 (1) of the SEA Regulations**

**The characteristics of the plan, having due regard, in particular, to the following criteria**

Criteria	Screening assessment
The degree to which the plan or programme, or modification to a plan or programme, sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources	<p>The NCN Plan will identify, at a national level, key strategic corridors for interventions. This will comprise a proposed national network connecting settlements of over 5,000 inhabitants along identified corridors, including key strategic destinations.</p> <p>Detailed proposals for these corridors will then be implemented through subsequent plans and projects.</p> <p>In this respect the NCN Plan will set the framework for cycle infrastructure projects taken forward within these corridors.</p>
The degree to which the plan or programme, or modification to a plan or programme, influences other plans including those in a hierarchy	<p>The NCN Plan is a national plan. It will influence subsequent regional and local-level plans and projects. These could include, for example, Cycle Network Plans, local authority Development Plans and specific active travel schemes/projects.</p>
The relevance of the plan or programme, or modification to a plan or programme, for the integration of environmental considerations in particular with a view to promoting sustainable development	<p>The plan will support the ongoing development of a National Cycle Network. This will help facilitate a reduction of impacts on the environment from transport by supporting active travel use via non-motorised forms of transport. In this respect a key element of the NCN Plan will be to support the sustainability of Ireland's transport network.</p>
Environmental problems relevant to the plan or programme, or modification to a plan or programme	<p>There are no specific environmental problems relevant to the plan. However, the plan will, through promoting active travel use, support the ongoing development of a National Cycle Network which will support a reduction of impacts on the environment from transport.</p>
The relevance of the plan or programme, or modification to a plan or programme, for the implementation of European Union legislation on the environment (e.g. plans and programmes linked to waste management or water protection)	<p>The NCN Plan has limited direct relevance in terms of the implementation of EU legislation on the environment. For example, it does not seek to change regimes associated with the Water Framework Directive, Waste Framework Directive or Habitats/Birds Directives.</p>

**Table 3.2: Screening assessment relating to Schedule 1 (2) of the SEA Regulations****Characteristics of the effects and of the area likely to be affected, having regard, in particular, to**

<b>Criteria</b>	<b>Screening assessment</b>
The probability, duration, frequency and reversibility of the effects	The NCN Plan will set out a proposed national cycle network connecting settlements with 5,000 inhabitants or more along identified corridors. It will also seek to connect key strategic destinations, (e.g. top tourist attractions, transport hubs, centres of education, centres of employment and others).
The cumulative nature of the effects	
The transboundary nature of the effects	
The risks to human health or the environment (e.g. due to accidents)	The NCN Plan will consider corridors which have the potential to pass through environmentally sensitive locations. This includes locations sensitive in terms of landscape character, biodiversity, the historic environment; and areas which are of importance for supporting resilience to the effects of climate change and for supporting climate change mitigation.
The magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected)	
The value and vulnerability of the area likely to be affected due to: (a) special natural characteristics or cultural heritage, (b) exceeded environmental quality standards or limit values, (c) intensive land-use	These locations are likely to be in many cases in proximity to sites internationally and nationally designated for their environmental value, including, potentially, the following: National Parks; Special Areas of Conservation, Special Protection Areas and Ramsar sites; and Natural Heritage Areas. These corridors are also likely to be in locations in proximity to features recorded on the Site and Monuments Record and National Inventory of Architectural Heritage.
The effects on areas or landscapes which have a recognised national, European Union or international protection status.	Whilst the NCN Plan has the potential to take forward corridors within areas of significant environmental sensitivity, the plan will not propose specific schemes within these corridors. However, within these corridors, the plan will set the framework for plans and projects which have the potential to have significant environment effects. These could include short, medium and long-term effects, direct and indirect effects, and cumulative effects.

## 4. Summary and conclusions

- 4.1 The NCN Plan has been screened against the criteria set out in the SEA Directive and implementing SEA Regulations. The below summary discusses the two overarching considerations on whether the NCN Plan should be screened in as requiring a full SEA process.

### Legislative, regulatory or administrative provisions

- 4.2 Article 2 of the SEA Directive and Schedule 2 2.(3) of S.I. No 435/2004 suggests that SEA may only be required for plans and programmes which are required by “legislative, regulatory or administrative provisions”.
- 4.3 Whilst the NCN Plan is not specifically required by legislative, regulatory or administrative provisions, case law in Ireland suggests that this is not a reason to screen out the plan for SEA. In this respect European Commission guidance<sup>1</sup> on the issue suggests that, relating to non-mandatory plans and programmes:
- “Where there is any doubt, the distinction between plans and programmes and other measures should be drawn by referring to the specific objective laid down in Article 1 of the SEAD [SEA Directive], namely that plans and programmes which are likely to have significant effects on the environment are subject to an environmental assessment.”*
- 4.4 In light of these considerations, the NCN Plan should not be screened out for SEA due to it not being a mandatory plan required by legislative, regulatory or administrative provisions.

### Setting the framework for plans and projects

- 4.5 Schedule 2 2.(9) of SI No 435/2004 highlights that an SEA “*shall be carried out for all plans and programmes...which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications and tourism, and which set the framework for future development consent of projects listed in Annexes I and II to the Environmental Impact Assessment Directive*”.
- 4.6 A key consideration is therefore whether the NCN Plan sets the framework for projects which require Environmental Impact Assessment.
- 4.7 In this regard the NCN Plan will identify, at a strategic-level, key corridors for interventions. Detailed proposals for these corridors will then be implemented through subsequent plans and projects. In terms of whether these projects are likely to require EIA, this depends on whether they meet the criteria set out by provisions relating to the classes set out in Annex I or II of the EIA Directive, specifically in Schedule 5, Part 2 of the Planning and Development Regulations 2001, as amended.
- 4.8 Whilst cycling infrastructure is not specifically highlighted in Schedule 5, Part 2, there is some potential for projects which subsequently come forward within the identified corridors to require EIA. As such, the determination of whether such projects would require an EIA is dependent on the outcome of EIA screening on these projects.
- 4.9 The NCN Plan may also set the framework for plans which cover smaller elements of the National Cycle Network. Whilst these would not be plans deemed as mandatory under legislative, regulatory or administrative provisions, these plans could potentially include proposals which have the potential to have significant effects on the environment. These plans may therefore themselves require SEA.

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<sup>1</sup> European Commission 2017 REPORT FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT under Article 12(3) of Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017DC0234&from=EN>

- 4.10 In this respect the NCN Plan has the potential to set the framework for plans and projects which have the potential to lead to significant effects on the environment.

## Conclusions

- 4.11 In conclusion, the NCN Plan will identify, at a national level, key strategic corridors for interventions. It will comprise a proposed national network connecting settlements of over 5,000 inhabitants along identified corridors, including key strategic destinations. Detailed proposals for these corridors will then be taken forward and implemented through subsequent plans and projects.
- 4.12 Whilst the NCN Plan will itself not propose detailed interventions within the identified corridors, it will influence the location of new strategic active travel infrastructure, particularly outside urban areas. This infrastructure has the potential to take place in locations with significant environmental sensitivity, including in terms of landscape, historic environment and biodiversity designations.
- 4.13 In this respect, the plan is likely to set the framework for subsequent plans and projects which have the potential for significant effects on the environment. This includes, potentially, plans requiring an SEA process or projects requiring an EIA process.
- 4.14 For this reason, it is concluded that a full SEA process is required to accompany the NCN Plan.



Appendix G

# SEA Environmental Report

# National Cycle Network Plan

Strategic Environmental Assessment (SEA)

Environmental Report (Updated)

Transport Infrastructure Ireland

Project number: 60657618

July 2022

## Quality information

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# 1. Introduction

## 1.1 Overview

AECOM were commissioned to undertake an independent strategic environmental assessment of the National Cycle Network Plan (referred to hereafter as the 'NCN Plan').

Strategic environmental assessment (SEA) is a systematic process of predicting and evaluating the likely significant environmental effects of implementing a proposed plan or programme, in order to ensure that these effects are adequately addressed at the earliest appropriate stages of decision-making in tandem with economic, social and other considerations.

This document updates the draft SEA Environmental Report which was published alongside the NCN Plan for public consultation in May 2022. The Environmental Report was the main output of the SEA process and provided stakeholders with an overview of the likely significant effects of the NCN Plan and reasonable alternatives.

## 1.2 Background to the National Cycle Network (NCN) Plan

Transport Infrastructure Ireland (TII) worked with key stakeholders to prepare a new National Cycle Network Plan ('NCN Plan'). The NCN Plan maps existing cycling infrastructure and identifies gaps where future investment could be focused to establish a comprehensive and connected cycling network around Ireland.

The NCN Plan focuses on linking cities and towns of over 5,000 people with a safe, connected and inviting cycle network. It includes plans to create cycle routes to destinations such as transport hubs, centres of education, centres of employment, leisure and tourist destinations. It will optimise the potential for people to cycle as part of their daily activities, such as work or educational commuting. It will also integrate with existing and proposed cycle infrastructure. Both the safety and security of cyclists will be central to the development of the NCN.

The NCN builds on previous work completed by TII and aligns with the work being undertaken by the National Transport Authority (NTA) in developing urban and county level cycle networks. It integrates with other cycle routes and networks in various stages of development, including the EuroVelo routes, greenways and the Strategic Plan for Greenways in Northern Ireland. The NCN plan will complement these other cycling development projects and will provide a core spine that other networks and routes can connect to.

### 1.3 Scope / Geographical Coverage of the NCN Plan

The NCN Plan sets out a coherent and coordinated network of cycle corridors connecting settlements with 5,000 inhabitants or more. It integrates with and complements other existing and proposed cycle routes and networks.

The likely corridors identified through the NCN Plan mainly cover non-urban areas. Urban cycle networks are being covered by work currently being undertaken by the National Transport Authority (NTA).

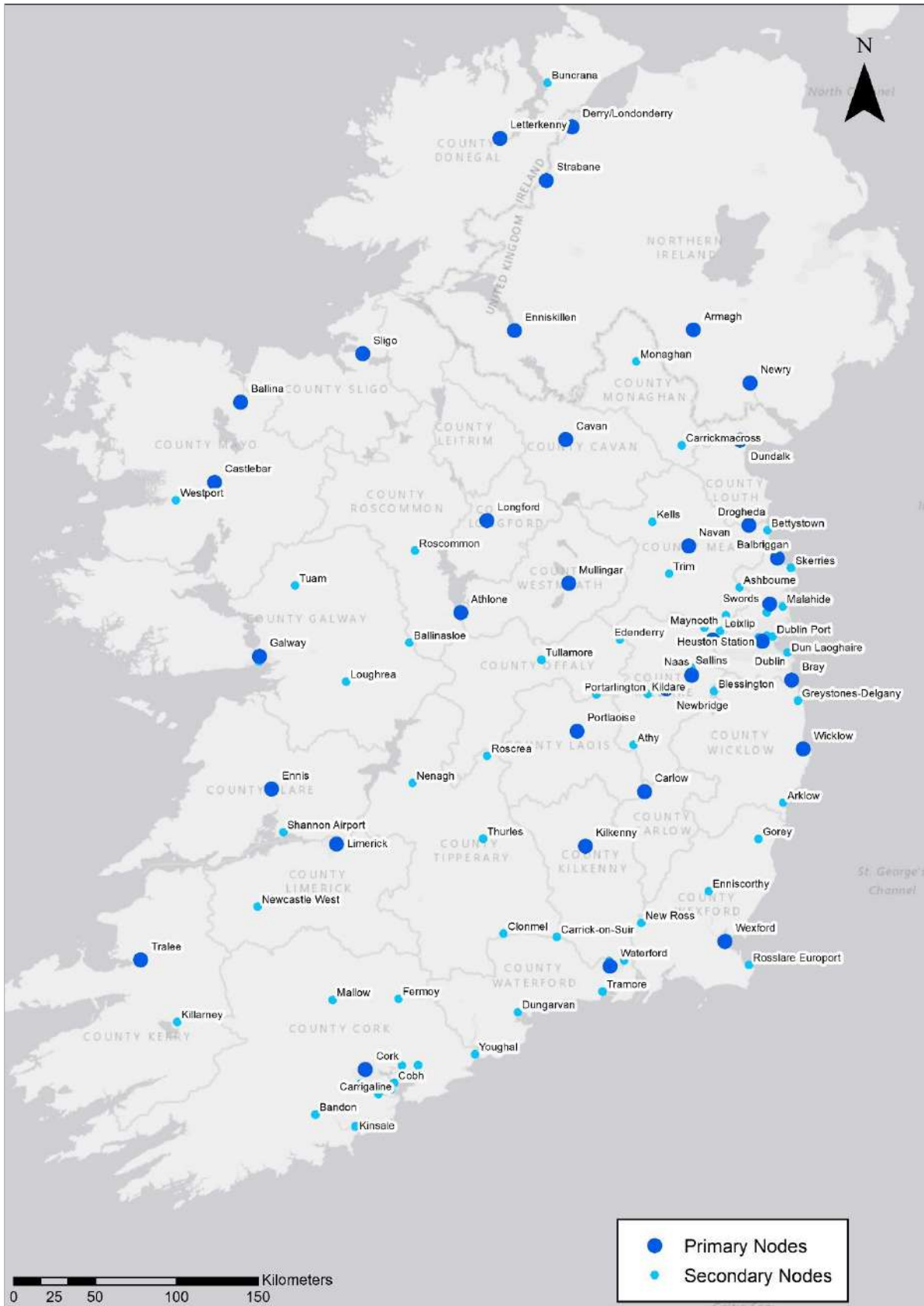
Whilst the NCN Plan does not include specific or detailed routes, it does identify broad corridors through which interventions should be targeted. These identified corridors will be accompanied by recommendations relating to a minimum level of infrastructure required across the network (e.g., segregated cycle path).

**Figure 1.1** highlights the potential nodes that were focussed on through the development of the NCN Plan.

It is an objective of the NCN Plan to *'integrate with existing and proposed cycling infrastructure in Northern Ireland, as appropriate'*.

Both the Department for Infrastructure and Sustrans Northern Ireland have been consulted in relation to the development of the NCN Plan with ongoing engagement planned to ensure integration of planned cycle networks across the border.

Figure 1.1: Map of the Nodes Focussed on Through the Development of the NCN Plan





## 1.4 Vision and Aims for the NCN Plan

The vision statement of the NCN Plan is to:

*“Develop a safe, connected, and inviting cycle network between urban areas and key destinations to achieve accessible, sustainable, and high-quality routes that will help to reduce the carbon impact of transport and promote a healthy and inclusive society.”*

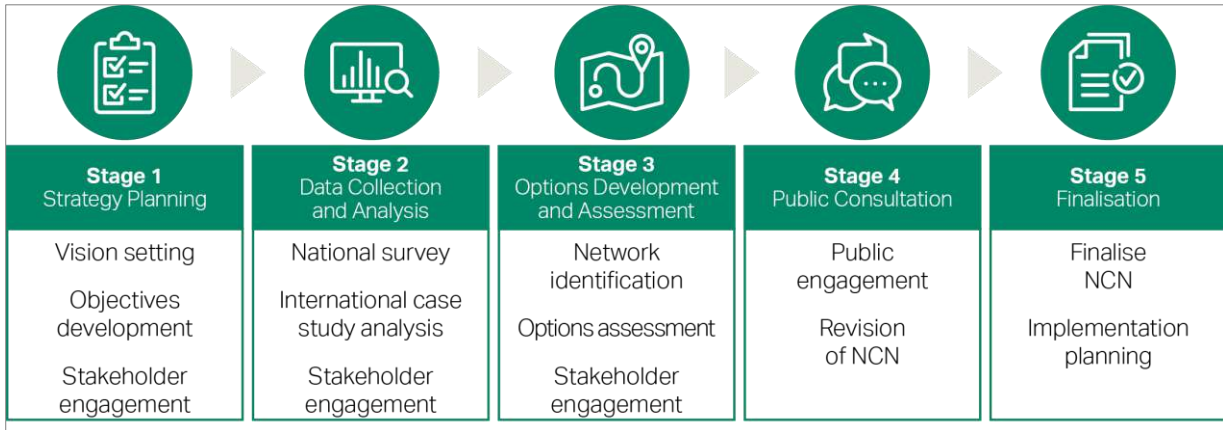
The NCN aims to link towns, cities and destinations across Ireland with a safe, connected and inviting cycle network; encouraging more people away from their cars and onto their cycles. In this context the NCN aims to generate benefits for cyclists and communities across Ireland, including:

- Being the core cycle network for Ireland, connecting towns and destinations to which other cycle networks will connect.
- Acting as a multifunctional network available for commuters, leisure users and tourists.
- Establishing a coherent and coordinated network that integrates with existing and proposed cycle routes being developed by TII and other bodies.
- Helping inform how local authorities prioritise Exchequer-funded investments in cycle infrastructure.
- Making use of existing infrastructure wherever possible including greenways and declassified roads where there is enough space to provide safe and appropriate cycle facilities.
- Providing high-quality cycle infrastructure to promote safety, comfort and increased participation in cycling. Minimum design standards will be developed for how the network will be built.
- Clearly signposting the network to identify and distinguish it from other cycle facilities.

## 1.5 Development Process for the NCN Plan

The approach to the Plan is structured around a five-stage process outlined in **Figure 1.2**. The current stage in plan development is Stage 5 - Finalisation.

**Figure 1.2: NCN Plan Development Process**



Following consultation on the draft NCN Plan (which was undertaken in May 2022), responses were analysed, and the NCN proposals were updated to reflect feedback received. Detailed plans for the roll out of the NCN over the coming years will then be developed.

## 2. Approach to the SEA

### 2.1 Introduction

Strategic Environmental Assessment (SEA) is a process for evaluating, at the earliest appropriate stage, the potential environmental implications of plans or programmes (P/Ps). The SEA process involves appraisal and reporting, proposing mitigation measures and monitoring environmental effects of plans, programmes, and strategies.

The purpose is to ensure that the environmental consequences of P/Ps are assessed both during their preparation and prior to their adoption. The SEA process also gives specified ‘environmental authorities’, interested parties and the general public, an opportunity to comment on the environmental impacts of the proposed P/P and reasonable alternatives, and to be kept informed during the decision-making process.

SEA derives from the Directive 2001/42/EC - *Assessment of Effects of Certain Plans and Programmes on the Environment* (the ‘SEA Directive’). Article 1 of the SEA Directive states that:

*“The objective of this directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with this directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment.”*

The requirement for SEA in Ireland was introduced by:

- European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. No. 435 of 2004); as amended by European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011, (S.I. No. 200 of 2011); and
- Planning and Development Strategic Environmental Assessment (SEA) Regulations 2004 (S.I. No. 436 of 2004), as amended by the Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011 (S.I. No. 201 of 2011).

Schedule 2 (9) of S.I. No. 435 of 2004 highlights that an SEA “*shall be carried out for all plans and programmes...which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications and tourism, and which set the framework for future development consent of projects listed in Annexes I and II to the Environmental Impact Assessment Directive*”.<sup>1</sup> The SEA for the NCN Plan has therefore

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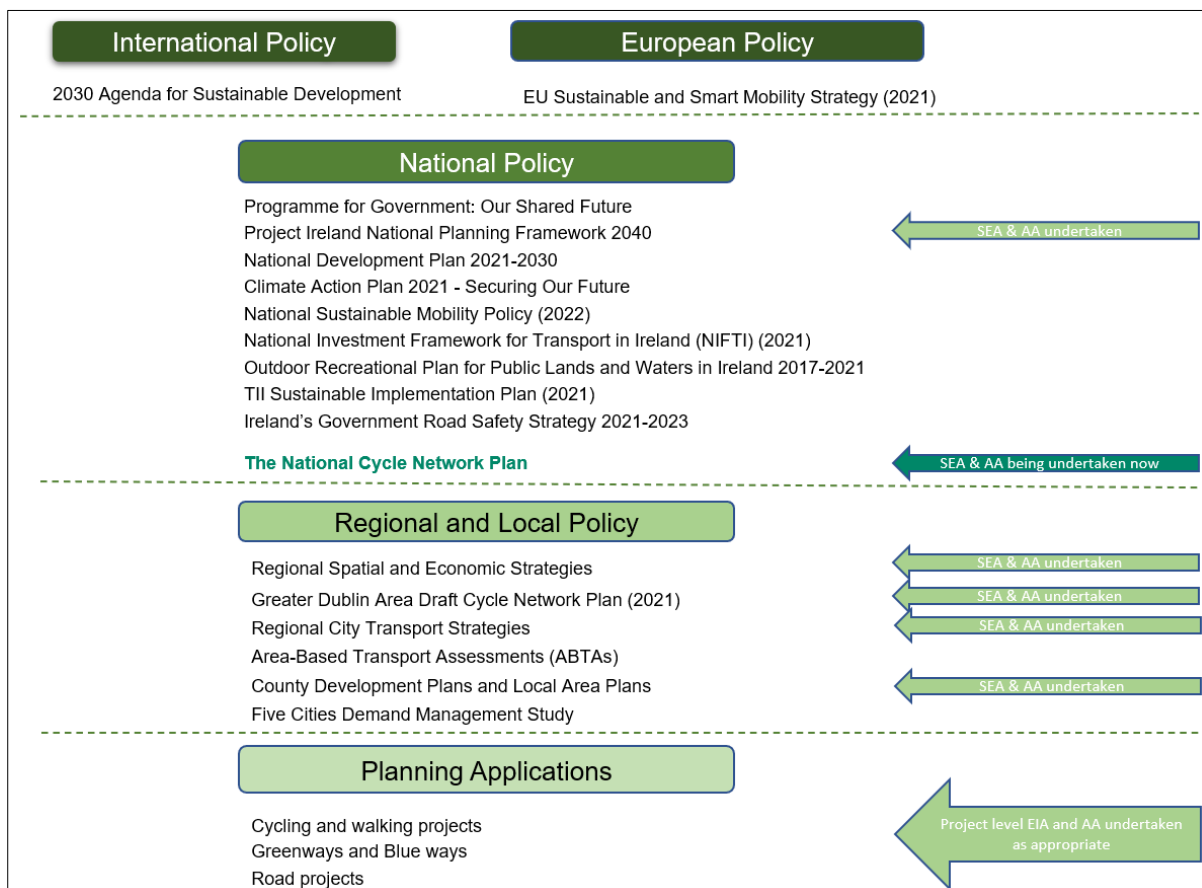
<sup>1</sup> Section 9(1) of S.I. No. 435 of 2004 as amended by S.I. No. 200 of 2011

been undertaken to meet the requirements S.I. No. 435 (as amended), referred to in this Environmental Report as the ‘SEA Regulations’.

## 2.2 Hierarchy of Planning and Environmental Assessment

The hierarchy of planning and environmental assessment in which the NCN Plan is situated is detailed on **Figure 2.1** below.

**Figure 2.1: Hierarchy of Planning and Environmental Assessment**



The National Planning Framework 2040 (NPF) was subject to a full SEA and Stage 2 AA. The NPF will be given regional expression through land use plans including the Regional Spatial and Economic Strategies (RSES), which are also subject to SEA and AA. SEA and AA requirements apply to City and County Development Plans and Local Area Plans.

The priorities and objectives of the NCN Plan align with the objectives and priorities set out in the NPF and transport strategies focused on providing a safe and connected cycle network across Ireland.

## 2.3 Overview of SEA Process and Stages

SEA is a systematic process for evaluating the environmental consequences of proposed plans or programmes to ensure environmental issues are fully integrated and addressed at

the earliest appropriate stage of decision making, with a view to promoting sustainable development. The central focus of SEA is to enable environmental issues, and in particular ‘*likely significant environmental effects*’ of a Plans or Programmes (P/Ps), to be taken into consideration during the plan or programme making process.

The key phases in the SEA process as outlined in the Environmental Protection Agency’s (EPA’s) *SEA Process Checklist*<sup>2</sup> are outlined in **Table 2.1**.

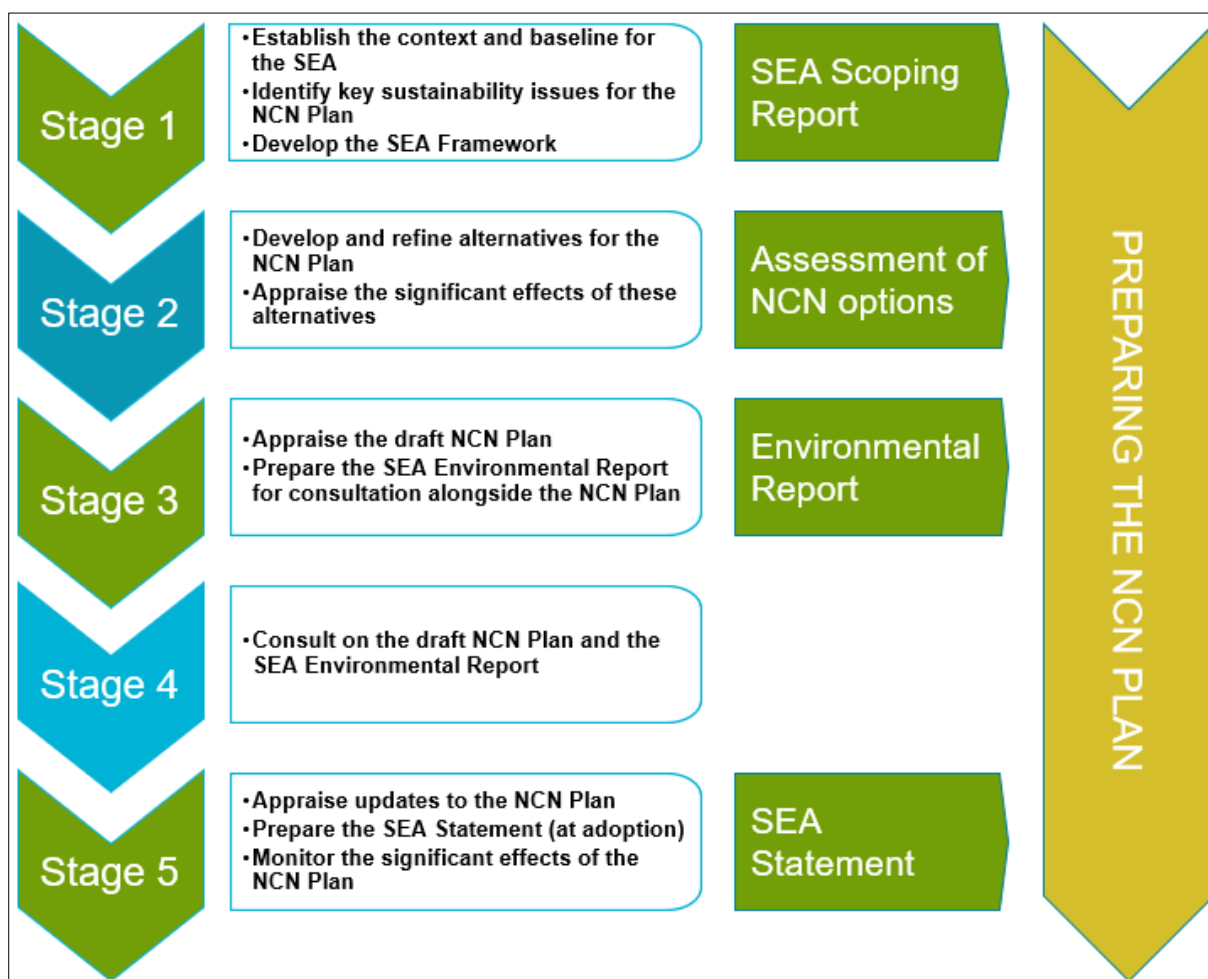
**Table 2.1: Overview of SEA Process**

Phase	Description	Status
<b>1. Screening</b>	The requirement to undertake a SEA is mandatory for certain Plan / Programme (P/P). Where SEA is not a mandatory requirement, the P/Ps is subject to a ‘Screening process’, to consider if it is <i>likely to have significant effects</i> on the environment, and therefore, if SEA is required.	<b>Complete (November 2021)</b>
<b>2. Scoping</b>	Preparation of a SEA Scoping Report highlighting that the Environmental Report is required to include: <ul style="list-style-type: none"> <li>• Methods of assessment;</li> <li>• Contents and level of detail in the Plan/Programme;</li> <li>• The stage in the Plan/Programme-making process; and</li> <li>• The extent to which certain matters are more appropriately assessed at different levels in the decision-making process in order to avoid duplication of environmental assessment.</li> </ul> Transboundary consultation was undertaken with the relevant authorities in Northern Ireland.	<b>Complete (March 2022)</b>
<b>3. Environmental Assessment</b>	The purpose of this stage of the process is to assess the likely significant impacts on the environment as a result of implementation of the P/P and consideration of reasonable alternatives. The output from this stage is an Environmental Report which accompanies the draft P/P for consultation. Transboundary consultation, was undertaken with the relevant authorities in Northern Ireland.	<b>Complete (May 2022)</b>
<b>4. SEA Statement</b>	Completion/adoption of the P/P taking account of likely significant environmental effects, any submissions or observations received from consultations and integration of mitigation and monitoring measures within the Plan. The Environmental Report was updated to reflect consultation comments, and an SEA Statement was prepared, summarising: <ul style="list-style-type: none"> <li>• How environmental considerations have been integrated into the P/P;</li> <li>• How the environmental report, and any submissions or consultations have been taken into account in the preparation of the P/P;</li> <li>• The reasons for choosing the P/P; and</li> <li>• The measures decided for monitoring the significant environmental effects of implementation of the P/P.</li> </ul>	<b>Current Stage (Final)</b>

<sup>2</sup> EPA (2013).

In the context of the SEA process for the NCN Plan, the key stages (following SEA screening) are set out in **Figure 2.2**.

**Figure 2.2: Key Stages of SEA Process for the NCN Plan**



A more detailed overview of the SEA process for the NCN Plan is presented below.

## 2.4 SEA Screening (Stage 1)

An SEA Screening Report was prepared by AECOM for the NCN Plan in November 2021. The screening sought to determine whether a full SEA process was required for the NCN Plan. The report concluded the following:

*“... the plan is likely to set the framework for subsequent plans and projects which have the potential for significant effects on the environment. This includes, potentially, plans requiring an SEA process or projects requiring an EIA process. For this reason, it is concluded that a full SEA process is required to accompany the NCN Plan”*

Given the plan timescales, and the strong likelihood of the NCN Plan requiring SEA, a separate consultation on the SEA Screening Report was not undertaken for the Plan. The SEA instead progressed to the next steps of the process, scoping.

## 2.5 SEA Scoping (Stage 2)

Article 5 of the SEA Directive requires that the competent authority responsible for the plan or programme in question consult with ‘environmental authorities’ regarding the scope and level of detail to be included in the environmental report.

To meet this requirement, a Scoping Report was prepared in early 2022 for the SEA of the NCN Plan.

Reflecting the requirements of the SEA Regulations, the following information was presented in the Scoping Report:

- **Context review:** This explored the environmental and sustainability ‘context’ for the SEA / NCN Plan through reviewing high level messages (e.g., internationally, from central government and at the regional level) with a view to establishing the focus for the SEA.
- **Baseline data:** This established the baseline situation in the absence of the NCN Plan (including the future baseline) in order to help identify the plan’s likely significant effects.
- **Key issues:** This identified particular problems or opportunities (‘issues’) that should be a focus of the SEA.

Drawing on the evidence base established and key issues identified through the above process, the Scoping Report presented an SEA Framework of objectives and assessment questions which would be used to assess plan proposals and alternatives.

### 2.5.1 SEA Scoping Consultation

Statutory consultation on the SEA Scoping Report was undertaken with the ‘environmental authorities’ for SEA in Ireland in March 2022.

Currently, the SEA ‘environmental authorities’ set out by the SEA Regulations are as follows:

- Environmental Protection Agency (EPA);
- Minister for Agriculture, Food and the Marine;
- Minister for Housing, Local Government and Heritage [including the Development Applications Unit]; and
- Minister for the Environment, Climate and Communications.

As the NCN Plan may affect the environment in Northern Ireland, transboundary consultation was also undertaken with the relevant authorities in Northern Ireland.

Five consultation responses were received on the SEA Scoping Report, including three from the SEA environmental authorities in ROI and two from Northern Ireland authorities. Responses were received from the following organisations:

- Environmental Protection Agency (EPA).
- Geological Survey Ireland (GSI) under the Department of the Environment, Climate and Communications (DECC).
- Department of Environment, Climate and Communications (DECC). Environmental Protection and Circular Economy - Materials Management Divisions.
- Northern Ireland Environment Agency (NIEA) under the Department of Agriculture, Environment and Rural Affairs (DAERA).
- Historic Environment Division (HED) under the Department for Communities (DfC).

The submissions provided information on sources of guidance, useful resources and suggestions for items to be addressed / monitored.

**Appendix A** provides a summary of the submissions received from the environmental authorities and transboundary consultees at scoping and provides an overview of how these comments have been considered and addressed.

## 2.6 SEA Environmental Report (Stage 3)

Stage 3 comprises the preparation of the main output of the SEA process: the SEA Environmental Report.

The SEA Regulations require that an environmental report is published for consultation alongside the draft plan that shall “*identify, describe and evaluate the likely significant effects on the environment of implementing the plan...and reasonable alternatives taking account of the objectives and the geographical scope of the plan*”. The report must then be taken into account, alongside consultation responses, when finalising the plan.

This SEA Environmental Report therefore assesses and evaluates the likely significant effects of the NCN Plan and the alternatives. This is with a view to providing TII, stakeholders and the public with a clear understanding of the likely environmental consequences of implementing the NCN Plan.

The draft NCN Plan and SEA Environmental Report were made available for consultation via the following website: <https://ncn.consultation.ai/>

The SEA environmental authorities, as well as any relevant transboundary authorities, were notified so that they may make a submission or observation in relation to the SEA Environmental Report and / or the draft NCN Plan.



Northern Ireland's statutory stakeholders and environmental authorities were also notified on the release of the draft NCN Plan and associated SEA Environmental Report.

Submissions made on the draft NCN Plan and associated documents, including the SEA, have resulted in an update to this Environmental Report, in order to take account of consultation responses and in order to take account of the minor changes that were made to the NCN Plan following consultation.

## 2.7 SEA Adoption Statement (Stage 4, Final Stage)

During this final stage of the SEA process (Stage 4), TII will publish an SEA Adoption Statement alongside the final adopted NCN Plan.

The SEA Adoption Statement includes how the SEA Environmental Report and consultations have been taken into account, summarising the key issues raised during the consultation process and in the Environmental Report indicating what / if action was taken.

The SEA Adoption Statement also includes the measures decided upon to monitor the significant environmental effects of implementing of the plan.

## 2.8 Appropriate Assessment (AA)

Under the EU Habitats Directive Member States are required to ensure the protection, conservation, and management of the habitats and species of conservation in all European sites.

The Habitats Directive (92/43/EEC) was transposed into Irish law by both the Planning and Development Act 2000 (as amended) and the European Communities (EC) (Birds and Natural Habitats) Regulations 2011 (as amended).

Appropriate Assessment (AA) screening is required for any project in Ireland (Article 6(3) of the Habitats Directive) with the potential to have a significant effect on a designated European site. AA is the assessment of the implications of a plan, alone and in-combination with other plans and projects, on the integrity of a Natura 2000 site, in view of its conservation objectives. There is an overlap between both the SEA and AA processes as both assessment regimes consider the potential impacts of a plan on biodiversity.

The Draft NCN Plan has undergone AA screening during its preparation. The conclusion of the AA Screening<sup>3</sup> was:

*“At this strategic stage these corridors are intentionally wide to enable detailed design work to be undertaken to capture the most appropriate route.*

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<sup>3</sup> AECOM (2022).

*Given this is and the multiple potential impacts associated with constructing new or updating existing cycle routes, it is impossible to draw a conclusion of ‘no likely significant effect’ in relation to the NCN Plan. Therefore, it is necessary to proceed to the next stage of Appropriate Assessment. All potential NCN route corridors are screened in for the Appropriate Assessment. “*

The Draft Plan was subject to a “Stage 2 AA” as required by Article 6(3) of the Habitats Directive (92/43/EEC) and a Natura Impact Report (NIR) was prepared and put on public display.

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

The NIR concluded:

*“Given the flexibility of design of the proposed cycle routes it can be concluded that the NCN would not have an adverse effect European sites alone.”*

*“Additionally, an in-combination assessment was also undertaken of relevant plans and projects...”*

*Given that each of the land use plans provide a policy for European site protection and each will have undergone their own Appropriate Assessment alone and in-combination and would have concluded no adverse effects before the plans could become adopted...*

*It can be concluded that the NCN Plan would not have an adverse effect on the integrity of European sites, either alone or in combination with other plans and projects.”*

The NIR also provided recommendations that should be included in the Final NCN Plan.

## 2.9 SEA Guidance

The SEA process has been undertaken to meet the requirements of Directive 2001/42/EC *on the Assessment of the Effects of Certain Plans and Programmes on the Environment* (the SEA Directive) and the national implementing legislation, S.I. No. 435 of 2004, as amended by Regulations S.I. No. 200 of 2011.

The following principal sources of guidance were identified during the SEA process, including in the preparation of the Environmental Report:

- Department of Communications, Climate Action & Environment (DCCA) (2019). Climate Action Plan 2019, To Tackle Climate Breakdown.
- Department of Environment, Community and Local Government (DECLG) (2013). *Integrated Biodiversity Impact Assessment – Streamlining AA, SEA and EIA*

*Processes: Practitioner's Manual. EPA Strive Programme 2007-2013. Strive Report Series No. 106.*

- Department of Environment, Community and Local Government (DECLG) (2013). *Circular Letter PL 9/2013: Article 8 (Decision Making) of EU Directives 2001/42/EC on Strategic Environmental Assessment (SEA) as amended.*
- Department of Environment, Community and Local Government (DECLG) (2013). *Circular Letter PSSP 6/2011: Further Transposition of EU Directive 2001/42/EC on Strategic Environmental Assessment (SEA).*
- Department of Environment, Heritage and Local Government (DEHLG) (2014). *Implementation of SEA Directive (2001/42/EC): Assessment of the Effects of Certain Plans and Programmes on the Environment.*
- Environmental Protection Agency (EPA) (2003). *SEA Methodologies for Plans and Programmes in Ireland – Synthesis Report.*
- Environmental Protection Agency (EPA) (2008). *SEA Process Checklist, 2008.*
- Environmental Protection Agency (EPA) (2013). *SEA Resource Manual for Local and Regional Planning Authorities.*
- Environmental Protection Agency (EPA) (2015). *Developing and Assessing Alternatives in Strategic Environmental Assessment - Good Practice Guidance.*
- Environmental Protection Agency (EPA) (2015). *SEA Scoping Guidance Document.*
- Environmental Protection Agency (EPA) (2017). *GISEA Manual - Improving the Evidence Base in SEA.*
- Environmental Protection Agency (EPA) (2019 updated). *Integrating Climate Change into Strategic Environmental Assessment in Ireland - A Guidance Note.*
- Environmental Protection Agency (EPA) (2019). *Tiering of Environmental Assessment - The Influence of Strategic Environmental Assessment on Project-level Environmental Impact Assessment.*
- Environmental Protection Agency (EPA) (2020). *Good Practice Guidance on Cumulative Effects Assessment in Strategic Environmental Assessment.*
- Environmental Protection Agency (EPA) (2020). *Guidance on Strategic Environmental Assessment (SEA) Statements and Monitoring.*
- Environmental Protection Agency (EPA) (2020). *Ireland's Environment - An Integrated Assessment 2020.*
- Environmental Protection Agency (EPA) (2020). *Second Review of SEA Effectiveness in Ireland.*
- Environmental Protection Agency (EPA) (2021). *SEA Pack, September 2021.*
- Environmental Protection Agency (EPA) (2022). *SEA Spatial Information Sources inventory, January 2022.*

- European Communities (EC) (1992). *DIRECTIVE 92/43/EEC*.
- European Communities (EC) (2001). *Directive 2001/42/EC on the assessment of Certain Plans and Programmes on the Environment*.
- European Communities (EC) (2004). *Guidance on Implementation of Directive 2001/42/EC*.
- European Communities (EC) (2013). *Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment*.
- European Communities (EC). (2002). *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 Communities (EC). S.I. No. 200 of 2011 - European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011.
- European Communities (EC). S.I. No. 435 of 2004 - Environmental Assessment of Certain Plans and Programmes) Regulations 2004.
- EPA **AA GeoTool**: <https://gis.epa.ie/EPAMaps/AAGeoTool>
- EPA **Air Quality** Reports: <https://www.epa.ie/publications/monitoring--assessment/air/>
- EPA **Environmental Mapping** / Geographical Information System (GIS) tools: <http://gis.epa.ie/SeeMaps>
- EPA **SEA WebGIS Tool**: <https://gis.epa.ie/EPAMaps/SEA>
- EPA **Strategic Environmental Assessment**. Available at: <https://www.epa.ie/our-services/monitoring--assessment/assessment/strategic-environmental-assessment/>
- EPA **Water Quality Reports**: <https://www.epa.ie/publications/monitoring--assessment/>
- EPA **WFD Application**: [www.catchments.ie](http://www.catchments.ie)
- GEOHIVE *Environmental Sensitivity Mapping* (2022).
- Department for Communities (DfC) (2022). *Historic Environment Map Viewer*. Available at: <https://www.communities-ni.gov.uk/services/historic-environment-map-viewer>
- Department for Infrastructure (DfI) (2015). *Strategic Planning Policy Statement for Northern Ireland*.
- Department of Agriculture, Environment and Rural Affairs (DAERA) (2015). *Biodiversity Strategy for Northern Ireland to 2020*.
- Department of Agriculture, Environment and Rural Affairs (DAERA) (2021). *Draft Environment Strategy for Northern Ireland*.
- Department of Agriculture, Environment and Rural Affairs (DAERA) (2013). *Northern Ireland State of the Environment Report*. Available at: <https://www.daera-ni.gov.uk/publications/state-environment-report-2013>

- Department of Agriculture, Environment and Rural Affairs (DAERA) (2022). *Designated Scientific Sites*. Available at: [www.daera-ni.gov.uk/landing-pages/protected-areas](http://www.daera-ni.gov.uk/landing-pages/protected-areas)
- Department of Agriculture, Environment and Rural Affairs (DAERA) (2022). *Regional Landscape Character Map viewer*. Available at: <https://www.daera-ni.gov.uk/services/regional-landscape-character-areas-map-viewer>
- Department of Agriculture, Environment and Rural Affairs (DAERA) (2022). *Map browser for NI protected sites and known priority habitat*. Available at: [www.daera-ni.gov.uk/services/natural-environment-map-viewer](http://www.daera-ni.gov.uk/services/natural-environment-map-viewer)
- Department of Agriculture, Environment and Rural Affairs (DAERA) (2022). *Natural Environment Datasets*. Available at: <https://www.daera-ni.gov.uk/contacts/natural-environment-related-datasets>
- NI Heritage (2019). *Archaeology 2030 - A Strategic Approach for Northern Ireland*. Available at: niheritagedelivers.org
- Northern Ireland Environment Agency (NIEA) (2013). *A Second Assessment of the State of Northern Ireland's Environment*.
- Northern Ireland Environment Agency (NIEA) (2021). *Water Framework Directive Statistics Report*.
- Department of Agriculture, Environment and Rural Affairs (DAERA) (2020). *Air Pollution in Northern Ireland 2020*. Available at: [https://www.airqualityni.co.uk/documents/technical-reports/Air Pollution in Northern Ireland 2020 Issue1-screen-optimised.pdf](https://www.airqualityni.co.uk/documents/technical-reports/Air%20Pollution%20in%20Northern%20Ireland%202020%20Issue1-screen-optimised.pdf)
- Department of Agriculture, Environment and Rural Affairs (DAERA) (2022). *Landscape Character of Northern Ireland*. Available at: <https://www.daera-ni.gov.uk/articles/landscape-character-northern-ireland>
- Department of Finance (2022). *Northern Ireland Statistics and Research Agency (NISRA)*. Available at: <https://www.nisra.gov.uk/>

## 3. Review of Relevant Plans, Policies and Programmes

### 3.1 Introduction

This chapter sets out how the NCN Plan interacts with other key relevant plans, policies and programmes and their environmental protection objectives. A review of other plans, policies and programmes and the legislative framework is an important part of setting the context for the SEA and the NCN Plan.

The SEA Directive states in Article 5(1) of Annex 1 that the environmental assessment must identify:

*“the environmental protection objectives, established at International, European Union or national level, which are relevant to the plan or programme, or modification to the plan or programme, and the way those objectives and any environmental considerations have been taken into account during its preparation”.*

Therefore, the NCN Plan is part of a larger picture of overall national policies that must work towards a single set of overall objectives. Policies and objectives around issues such as land use, development, population distribution, sustainability and climate action, for example, are determined by other government agencies and authorities, but must be fully reflected in the NCN Plan.

This appendix is not intended to represent a comprehensive list of all legislation / plans / programmes / guidelines, but rather a collation of the most relevant all legislation / plans / programmes / guidelines.

#### 3.1.1 UN Sustainable Development Goals

Since 2015, Ireland has been a signatory to the United Nations (UN) Sustainable Development Goals (SDGs), which frame national agendas and policies to 2030. There are 17 SDGs which form part of the 2030 Agenda, which sets out a 15-year plan to achieve these goals (**Figure 3.1**). These goals are mirrored through EU strategies such as Europe 2020 and the European Regional Development Fund which emphasise smart, sustainable and inclusive growth.

Key priorities are to halt biodiversity loss, protect and improve the environment, and enable the transition to a circular economy. As sustainability is at the heart of long-term energy planning, it is important that the SDGs are integrated into Irish policymaking from the top tier down.

**Figure 3.1: United Nations Sustainable Development Goals<sup>4</sup>**

There is significant alignment between the UN SDGs and the Project Ireland 2040 National Planning Framework National Strategic Outcomes (NSOs). For example, SDG 11 Sustainable Cities and Communities aligns with NSO1 Compact Growth and NSO4 Sustainable Mobility. Similarly, SDG 13 Climate Action aligns with NSO8 Transition to a Low Carbon and Climate Resilient Society.

The development of the NCN Plan aligns with the following five UN SDGs, which are:

3. Good Health and Wellbeing.
5. Gender Equality.
10. Reduced Inequalities.
11. Sustainable Cities and Communities.
13. Climate Action.

The NCN Plan is consistent with these SDGs, in that it will develop a safe, connected, and cycle network between urban areas and key destinations. The NCN Plan will also achieve accessible, sustainable, and high-quality routes that will help to reduce the carbon impact of transport and promote a healthy and inclusive society.

## 3.2 EU and National Legislation

There is a legislative framework for the protection of the environment and our natural resources. Where relevant these are referenced in the plan-making process for the development plan and the NCN Plan includes relevant objectives for integration with key aims and requirements.

<sup>4</sup> United Nations (UN) (2022).

**Table 3.1** and **Table 3.2** provide a list of the principal EU and national legislation and EU frameworks respectively. These are not intended to be a register of all legislation / plans / programmes / guidelines, but rather an examination of the key environmental protection objectives relevant to the NCN Plan.

**Table 3.1: Principal EU and National Legislation**

EU Legislation	National Legislation
Strategic Environmental Assessment (SEA) Directive (2001/42/EEC)	Planning and Development Acts 2000, as amended
Environmental Impact Assessment Directive (2011/92/EU) as amended by (2014/52/EU)	Planning and Development Regulations 2001, as amended
Habitats Directive (92/43/EEC)	European Communities (Birds and Natural Habitats Regulations) 2011 (S.I. No. 477 of 2011)
Birds Directive (2009/147/EC) on the Conservation of Wild Birds, 1979	Wildlife Act 1976, as amended
Water Framework Directive (WFD) (2000/60/EC)	Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. 435 of 2004) as amended by S.I. 200 of 2011
Groundwater Directive (2006/118/EC)	The Water Services Act (2007 & 2013)
Marine Strategy Framework Directive	Climate Action and Low Carbon Development Act 2015
Floods Directive (2007/60/EC)	Climate Action and Low Carbon Development (Amendment) Act 2021
Urban Wastewater Treatment Directive (91/271/EEC)	Roads Act 1993, as amended
Drinking Water Directive (98/83/EC)	Waste Management Act 1996 as amended
EU Landfill Directive (1999/31/EC)	National Monuments Act 1930-2004
Waste Framework Directive (2008/98/EC) as amended by Directive (EU) 2018/851	Heritage Act
Environmental Noise Directive (2002/49/EC)	Architectural Heritage and Historic Monuments Act
Environmental Liability Directive (2004/35/EC)	Transposing Regulation for Directives
Air Quality Fourth Daughter Directive (2004/107/EC)	
Air Quality Clean Air for Europe (CAFÉ) Directive (2008/50/EC)	
Revisited National Emissions Ceilings Directive (EU 2016/2284)	
Noise Directive (2002/49/EC)	
Governance of the Energy Union and Climate Action Regulation (EU) 2018/1999	



## Table 3.2: EU Frameworks

### EU Frameworks

EU Biodiversity Strategy 2030	A New Circular Economy Action Plan for a Cleaner More Competitive Europe (2020)
European Landscape Convention 2000	EU Sustainable and Smart Mobility Strategy (2020)
European Green Deal	Eighth (8 <sup>th</sup> ) Environment Action Programme (EAP) to 2030 (TBC)

EU 2030 Climate and Energy Package

## 3.3 Relevant National & Regional Plans, Programmes and Guidelines

**Table 3.3** presents a list of some of the main national and regional plans, programmes and guidelines influencing the Plan.

### Table 3.3: National & Regional Plans, Programmes and Guidelines

#### National & Regional Plans, Programmes and Guidelines

National Planning Framework (NPF)	National Policy Framework for Alternative Fuel Infrastructure in Transport in Ireland (2017-2030)
National Development Plan (NDP) 2021-2030	National Investment Framework for Transport in Ireland (2021)
National Mitigation Plan 2017	Integrated Implementation Plan (2019-2024) (Transport)
National Adaptation Framework 2018	Architectural Heritage Protection Guidelines for Planning Authorities (2011)
Regional Spatial and Economic Strategies	Heritage Ireland 2030
County and City Development Plans	County Heritage Plans
Climate Action Plan 2021	National Landscape Strategy 2015-2025
National Energy and Climate Plan 2021-2030	County Landscape Character Assessments
National Climate Change Adaptation Framework including the Sectoral Adaptation Plans	National Peatland Strategy Forestry Programme 2014-2020
National Policy Position on Climate Action and Low Carbon Development (2014)	National Countryside Recreation Strategy (2018)
Capital Investment Plan 2016-2021	Regional / County based waste management strategies
Ireland's Environment - An Assessment (2020)	Healthy Ireland: A Framework for Improved Health and Wellbeing 2019-2025
Draft River Basin Management Plan for Ireland 2022-2027	Healthy Cities and Counties (2019)
National CFRAMS Programme (2011)	National Physical Activity Plan 2016
Flood Risk Management Plans	Sport Ireland Participation Plan 2021-2024
The Planning System and Flood Risk Management for Planning Authorities (2009)	Creating Green Infrastructure for Ireland: Enhancing Natural Capital for Human Wellbeing

## National & Regional Plans, Programmes and Guidelines

National Biodiversity Action Plan 2017-2021 (NBAP for 2021-2025 pending)	Food Wise 2025
County Biodiversity Action Plans	Food Harvest 2020
Management Plans for Natura 2000 sites	Tourism Action Plan 2019-2021
All-Ireland Pollinator Plan 2021-2025	Tourism Policy Statement
Irish Water National Water Resources Plan Framework Plan (2021)	Our Sustainable Future - A Framework for Sustainable Development for Ireland (2012) and Progress Report 2015
Water Services Strategic Plan. A Plan for the Future of Water Services (2015) (Irish Water)	TII's Sustainability Implementation Plan (2021)
Irish Water Services Policy Statement 2018-2025	Outdoor Recreational Plan for Public Lands and Waters in Ireland (2017-2021)
National Air Pollution Control Programme (NAPCP) (2019)	Greater Dublin Area Draft Cycle Network Plan (2021)
Draft National Clean Air Strategy for Ireland (2022) (Consultation)	Other Regional City Transport Strategies
Draft Statutory Climate Change Adaptation Plan for the Transport Sector (2019)	Fáilte Ireland Visitor Experience Development
Draft National Sustainable Mobility Policy	Metropolitan Area Transport Plans
Smarter Travel - A Sustainable Transport Future - Transport Policy for Ireland 2009-2020	Regional Tourism Plans (currently being developed by Fáilte Ireland)
Whole of Government Circular Economy Strategy 2022-2023	Development of new Solid Fuel Regulations for Ireland (Public Consultation) (2021)
The Greenway Strategy - Strategy for the Future Development of National and Regional Greenways (2018)	Dublin Region Air Quality Plan 2021 (Four Dublin Local Authorities)
National Investment Framework for Transportation in Ireland	WHO Global Air Quality Guidelines 2021
Traffic and Transport Assessment Guidelines (2014)	Urban Transport-Related Air Pollution (UTRAP) Working Group (2021)
Transport 21, as superseded by the Department of Public Expenditure and Reform document titled Infrastructure and Capital Investment (2012-2016)	

## 3.4 Transboundary Policies, Plans, Programmes and Guidelines

**Table 3.4** presents a list of some of the main transboundary (Northern Ireland) policies, plans, programmes and guidelines influencing the Plan.

**Table 3.4: Transboundary Policies, Plans, Programmes and Guidelines****Transboundary Policies, Plans, Programmes and Guidelines**

Wildlife (NI) Order 1985 (as amended)	Convention for the Protection of the Architectural Heritage of Europe (Granada, 1985)
Wildlife and Natural Environment Act (NI) 2011	Convention for the Protection of the Archaeological Heritage of Europe (Valletta, 1992)
Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended)	Historic Monuments and Archaeological Objects (Northern Ireland) Order 1995
The Environment (NI) Order 2002	Protection of Wrecks Act 1973
Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017	Regional Development Strategy 2035
Strategic Planning Policy Statement (SPPS) for Northern Ireland	Archaeology 2030 - A Strategic Approach for Northern Ireland
Planning Policy Statements (PPS – in particular PPS2 and PPS18 <sup>5</sup> )	Strategic Planning Policy Statement for Northern Ireland
Biodiversity Strategy for Northern Ireland to 2020	Marine and Coastal Access Act 2009
Draft Environment Strategy for Northern Ireland	Marine Act (Northern Ireland) 2013
Climate Change Bill (NI) 2022	UK Marine Policy Statement (MPS) (2011)
Draft Northern Ireland Peatland Policy 2021-2040	Draft Marine Plan for Northern Ireland (2018)
Draft Green Growth Strategy for Northern Ireland	Sustainable Water - A Long-Term Water Strategy for Northern Ireland (2015-2040)
Northern Ireland Energy Strategy 2050	NI Water (2020) Our Strategy 2021-2046
Planning Act (Northern Ireland) 2011	The Water Environment (Floods Directive) Regulations (Northern Ireland) 2009
Fisheries Act 2020	

<sup>5</sup> It should be noted that the PPS's will be superseded by Local Development Plans when they are adopted.

## 4. Environmental Baseline

### 4.1 Introduction

Presented below is a description of the present state of the environment, and a description of how the baseline is likely develop should the plan not be implemented.

The baseline description is focused in the first instance on the Republic of Ireland (ROI) however given that Ireland shares a land boundary with Northern Ireland (NI), there is potential for environmental impact on population and human health, biodiversity, land and soils, water, air quality, climatic factors, cultural heritage and landscape which are transboundary, and potential for transboundary impacts are noted where relevant.

As highlighted in **Section 2.3**, the Scoping Report presented a context review which explored the environmental and sustainability 'context' for the SEA / NCN Plan, the baseline information for the SEA and a series of key issues which identified particular problems or opportunities that should be a focus of the SEA. Drawing on this scoping work, the SEA subsequently presented an SEA Framework of objectives and assessment questions against which the draft plan and alternatives could be appraised.

This scoping information (and the information presented in this Environmental Report) has been presented through the following themes:

1. Biodiversity (including Flora & Fauna).
2. Population and Human Health.
3. Land, Soils and Geology.
4. Water Quality.
5. Air Quality.
6. Climate Change (which includes mitigation and adaptation).
7. Cultural Heritage (including architecture and archaeology).
8. Landscape.

The selected SEA themes incorporate the 'SEA topics' suggested by Annex I (f) of the SEA Directive<sup>6</sup>. These were refined to reflect a broad understanding of the anticipated scope of NCN Plan effects.

A summary of the key issues and the full SEA Framework is presented below. The context review and baseline data, have been updated to reflect comments received on the Scoping Report consultation and Draft Environmental Report.

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<sup>6</sup> The SEA Directive is 'of a procedural nature' (para 9 of the Directive preamble) and does not set out to prescribe particular issues that should and should not be a focus, beyond requiring a focus on *'the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors'* [our emphasis]

### 4.1.1 Ireland's Environment - An Integrated Assessment 2020

The seventh State of the Environment Report published by the EPA (2020) - *Ireland's Environment - An Integrated Assessment 2020*, indicates that the overall quality of Ireland's environment is not what it should be.

As highlighted by the report, the environmental challenges that are currently facing Ireland cut across different environmental topics, such as climate, air, soil, water, biodiversity and waste, and across organisations and sectors, business and all levels of society. Unspoilt areas are being squeezed out and Ireland is losing pristine waters and the habitats that provide vital spaces for biodiversity. Climate change is also impacting the established economic, social and natural structures of our world<sup>7</sup>.

There are 13 key State of the Environment messages identified by the report that require vision and full implementation to be successful in order to protect the environment, health, and wellbeing.

The State of the Environment Report highlights that high-quality green and blue spaces are not just for nature but for peoples' health and wellbeing. Chapter 11 of this report focuses on environmental pressures from transport and looking at the transformation towards sustainable mobility within the sector. Chapter 14 of this report looks at the importance of providing integrated health-promoting environments in urban planning which can promote more active travel, reduce air pollution through the use of fewer private vehicles, act as quiet areas buffered from environmental noise and improve the physical and mental health of those cycling. Other chapters in this report relevant to the NCN Plan, include Chapter 2 - Climate Change, Chapter 3 - Air Quality and Chapter 4 - Environmental Noise.

The relevant recommendations, key issues and challenges described in the EPA's State of the Environment Report will be taken into account during the development of the Draft NCN Plan and SEA.

## 4.2 List of Datasets for the SEA

The datasets identified in the **Table 4.1** below will be utilised throughout the SEA process.

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<sup>7</sup> EPA (2020). *Ireland's Environment - An Integrated Assessment 2020*.

**Table 4.1: List of Datasets for the SEA**

<b>SEA Theme</b>	<b>Potential Data Sources</b>
<b>Biodiversity</b>	<ul style="list-style-type: none"> <li>• Birds Atlas</li> <li>• Invasive Species Ireland website</li> <li>• National Biodiversity Action Plan</li> <li>• National Parks and Wildlife Services (NPWS)</li> <li>• RAMSAR</li> <li>• UNESCO Biosphere Reserve</li> <li>• DAERA - Designated Scientific Sites</li> <li>• Northern Ireland Environment Agency</li> </ul>
<b>Population and Human Health</b>	<ul style="list-style-type: none"> <li>• CSO Census</li> <li>• EPA</li> <li>• Fáilte Ireland</li> <li>• Population centres, density and statistics</li> <li>• Tourism – Dept of Tourism</li> <li>• Northern Ireland Statistics and Research Agency (NISRA)</li> </ul>
<b>Land Soils, Geology</b>	<ul style="list-style-type: none"> <li>• CORINE Land cover Database</li> <li>• EPA GIS datasets</li> <li>• European Commission</li> <li>• Geological Survey Ireland (GSI)</li> <li>• Teagasc Soil Information</li> <li>• UK Land Cover Map</li> <li>• Geological Survey of Northern Ireland (GSNI)</li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>• EPA GIS datasets</li> <li>• Catchments.ie</li> <li>• National Catchment Flood Risk Management Programme (CFRAM)</li> <li>• Office Public Works (OPW)</li> <li>• Geological Survey Ireland (GSI)</li> <li>• DAERA</li> <li>• Northern Ireland Environment Agency</li> <li>• Morphological Quality Index / River Hydromorphology Assessment Technique</li> </ul>
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>• EPA Air Quality in Ireland reports</li> <li>• EPA datasets</li> <li>• World Health Organisation (WHO)</li> <li>• Northern Ireland Environment Agency (NIEA)</li> <li>• DAERA – Air Pollution in NI</li> </ul>
<b>Climate Change</b>	<ul style="list-style-type: none"> <li>• CSO datasets</li> <li>• EPA datasets</li> <li>• Flood Risk Management Plans</li> <li>• Met Éireann</li> <li>• Sectoral Climate Change Adaptation Plans</li> <li>• UNFCC</li> <li>• Geological Survey Ireland (GSI)</li> <li>• Climate Change Committee</li> <li>• Northern Ireland Environment Agency (NIEA)</li> <li>• Northern Ireland Climate Change Adaptation Program</li> </ul>

SEA Theme	Potential Data Sources
<b>Cultural Heritage</b>	<ul style="list-style-type: none"> <li>• National Monuments Service / Record of Monuments and Places (RMP)</li> <li>• National Inventory of Architectural Heritage (NIAH)</li> <li>• UNESCO World Heritage Sites</li> <li>• Department of Heritage</li> <li>• Built Heritage at Risk in Northern Ireland (BHARNI) database</li> <li>• Historic Map Viewer (DFI)</li> <li>• Historic Environment Division (HED)</li> <li>• NI Heritage</li> </ul>
<b>Landscape</b>	<ul style="list-style-type: none"> <li>• CORINE Land cover Database</li> <li>• EPA datasets</li> <li>• National Landscape Strategy 2015-2025</li> <li>• DAERA - Regional Landscape Character Map viewer</li> <li>• DAERA - Landscape Character of Northern Ireland</li> </ul>

## 4.3 Biodiversity

### 4.3.1 Introduction

Biodiversity is a measurement of the variety and variability of flora and fauna in an area and any associated habitats. The importance of preserving biodiversity is recognised from an international to a local level. There is an intrinsic value to biodiversity while also having value in terms of quality of life and amenity.

Ireland has a rich diversity of ecosystems and wildlife in its terrestrial, freshwater and marine environments. However, over the last number of decades, human impacts on biodiversity have accelerated, which has resulted in increased damage and loss of habitats and species, the diversification of wildlife and the degradation of our environment<sup>8</sup>. On a global scale, biodiversity loss has been identified as one of the biggest threats facing humanity in the next decade.

Under EU law, Ireland is obligated to protect and preserve biodiversity. This protection covers species and habitats both within and outside designated sites. The Habitats Directive seeks to ensure the appropriate conservation of natural habitats and of wild fauna and flora. The Birds Directive (2009/147/EC) ensures the appropriate protection of Special Protection Areas (SPAs) (sites which are classified for rare and vulnerable birds listed in Annex I of the Directive).

The *National Biodiversity Action Plan* (NBAP) for Ireland provides a framework for government, civil society and private sectors to track and assess progress towards Ireland's Vision for Biodiversity over a five-year timeframe from 2017 to 2021. The NBAP seeks to address current issues and halt loss of biodiversity, in line with international commitments. The goal was to reduce biodiversity loss and degradation by 2016 and progress toward a

<sup>8</sup> Department of Culture, Heritage and the Gaeltacht (DCHG) (2017). *National Biodiversity Action Plan 2017-2021*.

substantial recovery be made by 2020. This follows the European Commission *EU Biodiversity Strategy to 2020* and the recent 8<sup>th</sup> Environmental Action Programme to 2030, to protect biodiversity, pursuing zero pollution to air water and soil, and reducing climate pressures. At the time of writing this report the NBAP for 2021-2025 has not been released.

### 4.3.2 Designated Sites

To protect its biodiversity resources, Ireland has designated numerous sites and species of conservation value and / or concern. These are outlined in **Table 4.2** below.

**Table 4.2: List of Designated Sites in Ireland**

Designation Type	Description	Number of Sites
<b>UNESCO Biosphere Reserve</b>	Biosphere reserves promote solutions reconciling the conservation of biodiversity with its sustainable use. They are learning areas for sustainable development under diverse ecological, social and economic contexts, touching the lives of more than 250 million people <sup>9</sup> . In Ireland these sites comprise Dublin Bay and Killarney National Park.	2
<b>OSPAR Marine Protected Area (MPA)</b>	Within OSPAR, MPAs are identified as areas for which protective, conservation, restorative or precautionary measures have been instituted for the purpose of protecting and conserving species, habitats, ecosystems or ecological processes of the marine environment. They may include existing SACs and SPAs, as well as other areas established under international or regional agreements (e.g., OSPAR, Helsinki Commission [HELCOM]).	19
<b>Ramsar</b>	The Convention on Wetlands, called the RAMSAR Convention, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources <sup>10</sup> . Wetlands are important ecosystems, which improve water quality, provide storm protection, flood mitigation, stabilise shorelines and maintain biodiversity. Ireland presently has 45 no. RAMSAR sites.	45
<b>Important Bird Area</b>	The Important Bird Areas (IBA) Programme is a BirdLife International initiative aimed at identifying and protecting a network of critical sites for the conservation of the world's birds. BirdWatch Ireland is responsible for promoting and updating the status of Ireland's birds and their key sites <sup>11</sup> .	140
<b>Special Areas of Conservation (SAC)</b>	Special Areas of Conservation (SAC) are designated under the EU Habitats Directive (92/43/EEC).	439 (6 are offshore) SACs*
<b>Special Protection Area (SPA)</b>	Special Protection Areas (SPAs) are designated under the Birds Directive (2009/147/EC).	165*

<sup>9</sup> UNESCO (2022). *Biosphere Reserves*.

<sup>10</sup> RAMSAR (2022).

<sup>11</sup> Bird Life (2022). *Data Zone*.



Designation Type	Description	Number of Sites
<b>Natural Heritage Area (NHA)</b>	Natural Heritage Areas (NHAs) are legally protected areas that are considered important for their habitats or which hold species of plants and animals whose habitat needs protection, including geological/geomorphological sites in need of protection through NHA designation. Under the Wildlife Amendment Act (2000) NHAs are legally protected from damage from the date they are formally proposed for designation.	148* (75 raised bogs and 73 blanket bogs)
<b>Proposed Natural Heritage Area (pNHA)</b>	Proposed Natural Heritage Areas (pNHAs) were published on a non-statutory basis in 1995 but have not since been statutorily proposed or designated. This network of NHAs and pNHAs provides supporting or steppingstone functions to the SAC and SPA network, in particular for species that move outside of SAC and SPA boundaries.	630*
<b>National Nature Reserve</b>	A Nature Reserve is an area of importance to wildlife, which is protected under Ministerial order (Wildlife Acts 1976 and 2000).	80**
<b>National Park</b>	National Parks are areas that exist to conserve natural plant and animal communities and scenic landscapes, and which facilitate public access.	6*
<b>Refuge for Fauna</b>	Refuges for Fauna are designated by ministerial order under Section 17 of the Wildlife Act 1976 as amended by Section 28 of the Wildlife (Amendment) Act 2000.	7
<b>Wildfowl Sanctuary</b>	Wildfowl sanctuaries are areas that have been excluded from the 'Open Season Order' so that game birds can rest and feed undisturbed. There are 68 no. sanctuaries in the State <sup>12</sup> .	68*

\* Source: [www.NWPS.ie](http://www.NWPS.ie)

\*\* Source: <https://data.gov.ie/dataset/nature-reserves-points-of-interest>

### 4.3.3 Natural Habitats and Protected Species

Under the EU Habitats Directive (92/43/EEC), Member States are obliged to undertake surveillance of the conservation status of their natural habitats and species in the Annexes and under Article 17, to report to the European Commission (EC) every six years on their status and on the implementation of the measures taken under the Directive.

The 2019 submission of Ireland's *Article 17 Report*<sup>13</sup> found 15% of habitats as 'favourable': 46% as 'inadequate' and 39% as 'bad'. Some of the key findings to the report include:

- Many Irish habitats are in unfavourable status. Although there are positive actions underway, many habitats are still declining.
- The primary perturbations to Irish habitats are from pollution of watercourses, drainage / cutting of peat and wetlands, grazing, invasive species, recreation, urbanisation, fertilizer application and the construction of roads.

<sup>12</sup> NPWS (2021). *Wildfowl sanctuaries*.

<sup>13</sup> NPWS (2019). *Ireland's Article 17 Report*.

- Nutrient loading is a major pressure for freshwater habitats with many considered unfavourable. Some marine habitats are considered to be improving.
- Raised bogs in Ireland have a 'bad' status and they are in a trend of ongoing decline.

#### 4.3.4 The Wildlife Act (Flora and Fauna) and Flora Protection Order (Plant Species)

The Wildlife Act 1976 to 2010 (as amended) is the principal national legislation underpinning the protection of fauna and flora and nature conservation in Ireland. All bird species, and a number of animals and flora are afforded protection under the Act. The Act also provides statutory protection for Natural Heritage Areas (NHAs).

The making of a Flora Protection Order under the Wildlife Act provides protection for nationally important sites for protected plants.

#### 4.3.5 Salmonid Rivers and Shellfish Areas

Inland Fisheries Ireland (IFI) is the primary body responsible for management of fish habitats, which is a national resource that needs to be protected.

The Salmonid Regulations (S.I. No. 293 of 1988) designate the waters capable of supporting salmon (*Salmo salar*), trout (*Salmo trutta*), char (*Salvelinus*) and whitefish (*Coregonus*) as protected. In order to sustain these species, rivers must have 'good' water quality, allow upstream movement and provide suitable habitat for spawning.

Shellfish growing areas are found around the coasts of Ireland. These were designated by the then Minister for the Environment, Community and Local Government, having responsibility for making the most recent shellfish water sites in 2009 (S.I. No. 55 of 2009).

#### 4.3.6 Invasive Species

Invasive species constitute a threat to biodiversity and ecosystems and can have economic costs.

In Ireland, there are currently 377 no. recorded non-native species and 342 no. non-native '*potential Invaders*', 66% are considered to have a low impact risk, 21% to have a medium impact risk and 13% have a high impact risk. The majority of invasive species in Ireland are plants, however, there is potential for rising trends of invasive vertebrate and invertebrate species<sup>14</sup>.

Landowners are responsible for preventing the spread of Japanese Knotweed on their own land and vigilance is required by all landowners as invasive species can spread quickly across boundaries.

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<sup>14</sup> O'Flynn, C., Kelly, J. and Lysaght, L. (2014).

Invasive species (including aquatic species) in Ireland are controlled under Regulations 49 and 50 of the European Communities (Birds and Natural Habitats) Regulations 2011.

#### 4.3.7 Summary of Future Baseline

- Habitats and species will potentially face increasing pressures from future development within Ireland, with the potential for negative impacts on the wider ecological network. This may include a loss of habitats and impacts on biodiversity networks. The potential impacts on biodiversity from climate change are likely to include changes in habitat, changes in species distribution, changes in hydrology, changes in ecosystem functioning and a range of others.
- Internationally and nationally designated sites are particularly sensitive to air quality issues. The nature, scale, timing, and duration of some human activities can result in the disturbance of species at a level that may substantially affect their behaviour, and consequently affect the long-term viability of their populations.
- Ireland is currently experiencing a decline in floral and faunal populations. Biodiversity is at risk because of habitat loss and damage.
- To maintain and improve the condition of biodiversity in the future, it will be important to not only protect and enhance important habitats but the connections between them, in addition to delivering net gains through new development areas. It will be crucial to effectively coordinate the delivery of new infrastructure to ensure that opportunities to improve green infrastructure and ecological corridors are maximised across Ireland.



## 4.4 Population and Human Health

### 4.4.1 Introduction

Population and human health cover a wide array of topics and consider the presence of people, their activities, their use of the receiving environment and their wellbeing. Population growth forecasts and distribution are important to the theme as they indicate pressure on infrastructure and resources, and potential exposure to pollution and risk. The health and wellbeing of a population can be affected by any number of environmental pathways, emissions to air and water being two prime examples. International and national standards of safety in doses, exposure and risk are adhered to regarding these emissions.

### 4.4.2 Overview of Population Baseline

According to the National Planning Framework (NPF), there will be roughly an extra one million people living in Ireland by 2040.

The last census in Ireland was in 2016<sup>15</sup>. The 2016 Census recorded the population of Ireland to be just over 4.2 million. The population of Ireland has been rising continuously since the 1960's, resulting in a constant increase in housing, infrastructure, services and facilities. This is attributed to increasing birth rates, decreasing death rates, an increase in life expectancy and a decrease in net migration<sup>16</sup>.

Population density is continually increasing in Ireland, but the biggest growth occurring in urban areas as the shift from rural to urban continues. Approximately 80% of the population increase, between 2011 and 2016, was in urban areas.

In April 2021, Ireland's population surpassed five million people (in April 2021 it was recorded at 5,011,500, compared to 4,757,976 in 2016)<sup>17</sup>.

In the 2018 Central Statistics Office (CSO) report *'Population and Labour Force Projections 2017-2051'*<sup>18</sup> the report stated the total population of Ireland is predicted to grow somewhere between 4.74 and 5.6 million amid 2017-2051. The average annual population growth rate for this period will be between 0.69 and 0.8%, down from the 1.6% growth rate observed during 2006 and 2011 and 0.7% between 2011 and 2016.

Social trends in Ireland also show a rise in the number of private households, with 1,029,084 households in 1991 increasing to 1,195,467 in 2016. In that same period, the average household size decreased from 3.3 persons per household to 2.75, driven by a fall in family sizes and a growth in one person households<sup>19</sup>.

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<sup>15</sup> The most recent Census in Ireland was April 2022; however, the results are still being processed.

<sup>16</sup> CSO (2016). *Census of Population 2016*.

<sup>17</sup> CSO (2021). *Population and Migration Estimates, April 2021*.

<sup>18</sup> CSO (2018). *Population and Labour Force Projections 2017-2051*.

<sup>19</sup> CSO (2018). *Population and Labour Force Projections 2017-2051*.

The CSO 2019 *National Travel Survey* (NTS)<sup>20</sup> is a household survey on the travel behaviour of respondents, carried out using the General Household Survey (GHS) in the fourth quarter<sup>21</sup> of 2019.

Nearly seven in every ten (68.5%) persons aged 18 years and over, walk a number of times a week, with 38.5% walking at least 5 times a week. Cycling is less frequent with 6.8% of persons surveyed cycling a number of times a week.

When asked what factors would encourage them to cycle more, 'improved health' would encourage one in five (20.5%) to cycle more. Safer cycling routes was a factor cited by over three in ten (31.7%) persons who would like to cycle more in the future<sup>22</sup>.

#### 4.4.2.1 Tourism and Recreation

Tourism has been identified as one of the country's most important economic sectors and is credited with playing a significant role in the economic recovery in recent years. Tourism is particularly important in that it can assist in providing business and employment opportunities across regions and leads to jobs across the spectrum of skills requirements.

In 2015 the national policy framework for the tourism sector '*People, Place and Policy: Growing Tourism to 2025*<sup>23</sup>', was published with a strong focus on developing the sector to attract ten million overseas visitors, create a range of direct and indirect enterprise opportunities and to grow employment in the sector to 250,000 persons by 2025.

Tourism and recreation are important to the health and wellbeing of people but also contribute to the economy at a local and national level.

Cycling is the second biggest activity market in Ireland, with numbers more than trebling over the last eight-year period. Mainland Europe has always been the most important market for cycling in Ireland, it's this market that's also behind the significant growth seen over the last number of years<sup>24</sup>.

Data from Sports Ireland<sup>25</sup> indicates there was approximately 259km of greenways in Ireland in November 2020 with a further 240km of greenway under construction.

In 2018 the Irish Government launched the *Strategy for the Future Development of National and Regional Greenways*<sup>26</sup>.

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<sup>20</sup> CSO (2019). *National Travel Survey*.

<sup>21</sup> October to December.

<sup>22</sup> CSO (2019). *National Travel Survey*.

<sup>23</sup> DTTS (2019). *People, Place and Policy: Growing Tourism to 2025*.

<sup>24</sup> Fáilte Ireland (2022). *Cycling*.

<sup>25</sup> DTTS (2021). *Transport Trends 2020. An Overview of Ireland's Transport Sector*.

<sup>26</sup> DTTS (2018). *Strategy for the Future Development of National and Regional Greenways*.

### 4.4.3 Human Health

The health and well-being of Ireland's population depend on many different factors such as environmental, individual, social and economic aspects.

Health has the potential to be impacted upon by environmental factors such as air, water or soil through which contaminants could accumulate and have potential to cause harm through contact with human beings. Hazards or nuisances to human health can arise due to exposure to these vectors, for example arising from incompatible adjacent land uses.

There are strong links between income and health, as it is recognised that the sustainability of current and future economic activity is an important element in protecting and promoting health and in reducing poverty and deprivation. However, emphasising economic growth without due regard for social and environmental consequences of such growth can have negative impacts on health, both for the population as a whole and for groups within the population.

External factors, e.g., Covid-19, can also have a major impact on human health - both physical and mental.

The 2020 EPA report '*Covid-19 and Sheer Wellbeing 2020 - Access to and Use of Blue / Green Spaces in Ireland during a Pandemic*<sup>27</sup>' highlighted the socio-economic inequalities in access to and uses of blue / green spaces in Ireland. Notably, there are significant differences between socio-economic groups in relation to the numbers of days spent outdoors in the previous week - the lowest income group reported the lowest average number of days (2.6) spent outdoors in blue / green spaces.

In 2019 the CSO released their second publication of the '*Irish Health Survey*', the data for which was collected in 2019 and early 2020 (pre-pandemic). The survey is based on self-reported data from persons aged 15 years and over and outlines their view of their health status<sup>28</sup>.

The publication of the 'main results' provides data and insights on various aspects of health in Ireland. Some key findings from the survey include<sup>29</sup>:

- Affluent people are more likely to feel their health status is 'Very good' or 'good' than people who are disadvantaged - 92% of very affluent persons compared to 78% of persons who are very disadvantaged.
- Over a quarter of persons aged 15 years and over report having a long-lasting condition, with older persons reporting higher levels.

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<sup>27</sup> EPA (2020). *Covid-19 and Sheer Wellbeing 2020 Access to and Use of Blue/Green Spaces in Ireland during a Pandemic*.

<sup>28</sup> CSO (2022). *Irish Health Survey 2019 - Main Results*.

<sup>29</sup> CSO (2022). *Irish Health Survey 2019 - Main Results*.

- Majority of persons (82%) report no limitations in everyday activities due to a health problem.
- Over a fifth (21%) of unemployed persons report some form of mental ill-health compared to 9% of those in employment.
- Prevalence of hospital in-patient admissions rises with age and disadvantage level.
- In general, females and older people more likely to use a preventive health service.
- Physical activity declines with age and relative disadvantage level.
- Younger persons more likely to drink six or more units of alcohol in one sitting.
- Over half of persons aged 15 years and over in the State are overweight or obese.

#### 4.4.4 Summary of Future Baseline

- There will be roughly an extra one million people living in Ireland by 2040 - National Planning Framework (NPF).
- Population density is continually increasing in Ireland, with the biggest growth occurring in urban areas.
- An increasing population will result in an increase in demand for housing, infrastructure, services and facilities, including access and demand for sustainable travel options.
- There are strong links between income and health. Affluent people are more likely to feel their health status is 'very good' or 'good' than people who are disadvantaged.
- Nearly seven in every ten (68.5%) persons aged 18 years and over, walk a number of times a week, with 38.5% walking at least 5 times a week. Cycling is less frequent with 6.8% of persons surveyed cycling a number of times a week.
- Tourism is an important economic sector in Ireland and is credited with playing a significant role in the economic recovery in recent years.
- Cycling is the second biggest activity market in Ireland, with numbers more than trebling over the last eight-year period, with potential for growth if supported by infrastructure.



## 4.5 Land, Soils and Geology

### 4.5.1 Introduction

**Land** is a limited resource with competition for use, including agriculture, forestry, and other uses. Land degradation is a global problem, often caused by a combination of factors such as poor land management and unsustainable development. Land degradation can exacerbate the impacts of natural disasters<sup>30</sup>.

The upper most layer of the earth's surface is generally termed '**soil**'. Soil is composed of mineral particles, organic matter, water, air and living organisms<sup>31</sup>.

**Geology** encompasses the understanding and study of the solid and liquid matter that constitutes the earth and the processes by which they are formed, moved and changed.

### 4.5.2 Land

The main source of national-scale information on land cover in Ireland is the EPA CORINE land cover data series, which is an EU-wide inventory of land cover in 44 no. classes categorised from satellite photography. The first CORINE dataset was produced in 1990, thereafter updated by the European Environment Agency (EEA) every six years.

The most recent assessment (CORINE 2018) shows that agriculture is the primary Land-use Land Cover (LULC) type within Ireland (67.6%), followed by wetlands (14.9%) and forestry (11%)<sup>32</sup>. The figure below presents a land cover map of Ireland.

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<sup>30</sup> European Commission (2022). *Soil and Land*.

<sup>31</sup> European Commission (2022). *Soil and Land*.

<sup>32</sup> EPA (2022). *Land-use and Cover*.



#### 4.5.2.1 Agriculture Land, Peatlands, Wetlands and Forestry

As noted above, the main land cover type in Ireland is agricultural land (67.6%). The main agricultural class is pasture (55.1% national land cover), followed by land occupied by agriculture (primarily pasture), which is scattered with areas of natural vegetation (6.9%), and arable land (4.5%)<sup>33</sup>.

Peatlands and wetlands are the second most widespread land cover type, covering almost one-fifth (about 17%) of the country, while forested areas cover about 11% of the country.

Peatlands provide a range of functions, including maintaining biodiversity and water quality, carbon storage and sequestration, agriculture, forestry, water regulation, recreation and flood attenuation<sup>34</sup>.

The classes for '*artificial surfaces and built ground*' encompass features such as urban fabric, ports, road / rail networks and extraction sites etc. and account for just 2.4% of the country.

#### 4.5.2.2 Coastal Zone and Coastal Protection

The coastal zone is a sensitive and valuable resources, in terms of natural and cultural heritage, scenic beauty and recreation and is an important economic resource, for the fishing, leisure and tourism industries. The coastal zone is subject to growing pressures from increasing population and sometimes conflicting social, economic and recreational uses.

In 2003, the Irish Coastal Protection Strategy Study (ICPSS) was commissioned, with the aim of providing information to support decision making about how best to manage risks associated with coastal flooding and coastal erosion. The study was completed in 2013 and provides strategic current scenario and future scenario (up to 2100) coastal flood hazard maps and strategic coastal erosion maps<sup>35</sup>.

GSI is undertaking a new coastal vulnerability mapping initiative. Currently the project is being carried out on the east coast and will be rolled out nationally. The output will provide for index-based mapping / visual representation of sensitive areas. Coastal development must take account of the changing and dynamic nature of the coast and the need for coastal protection.

#### 4.5.3 Soils

There are many ecosystem services that are owed to soils: such as the production of food, production of biomass, storage, filtration and transformation of nutrients and water, carbon storage, and contribution to the landscape and cultural environment.

However, land-use change is a major pressure impacting soils. During development, soils can be disturbed, moved, sealed-in, compacted (e.g., from heavy machinery operations), eroded

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<sup>33</sup> EPA (2022). *Land-use and Cover*.

<sup>34</sup> EPA (2022). *Land-use and Cover*.

<sup>35</sup> OPW (2019). *Irish Coastal Protection Strategy Study*.

or lost to water as a result of the siting of hazardous waste facilities and related infrastructure, such as road access.

Soil quality in Ireland is considered generally 'good' and Teagasc have indicated that 57% of soil samples had a pH at or above 6.3, considered optimal for agricultural use while reducing the need for fertilisers.

The Irish **Soil Information System** (SIS) is a five-year programme, supported by the EPA<sup>36</sup> and Teagasc, to develop a 1:250,000 scale national soil map<sup>37</sup>. The Irish Soil Information System adopted a unique methodology combining digital soil mapping techniques with traditional soil survey application. The figure below presents the SIS map of Ireland.

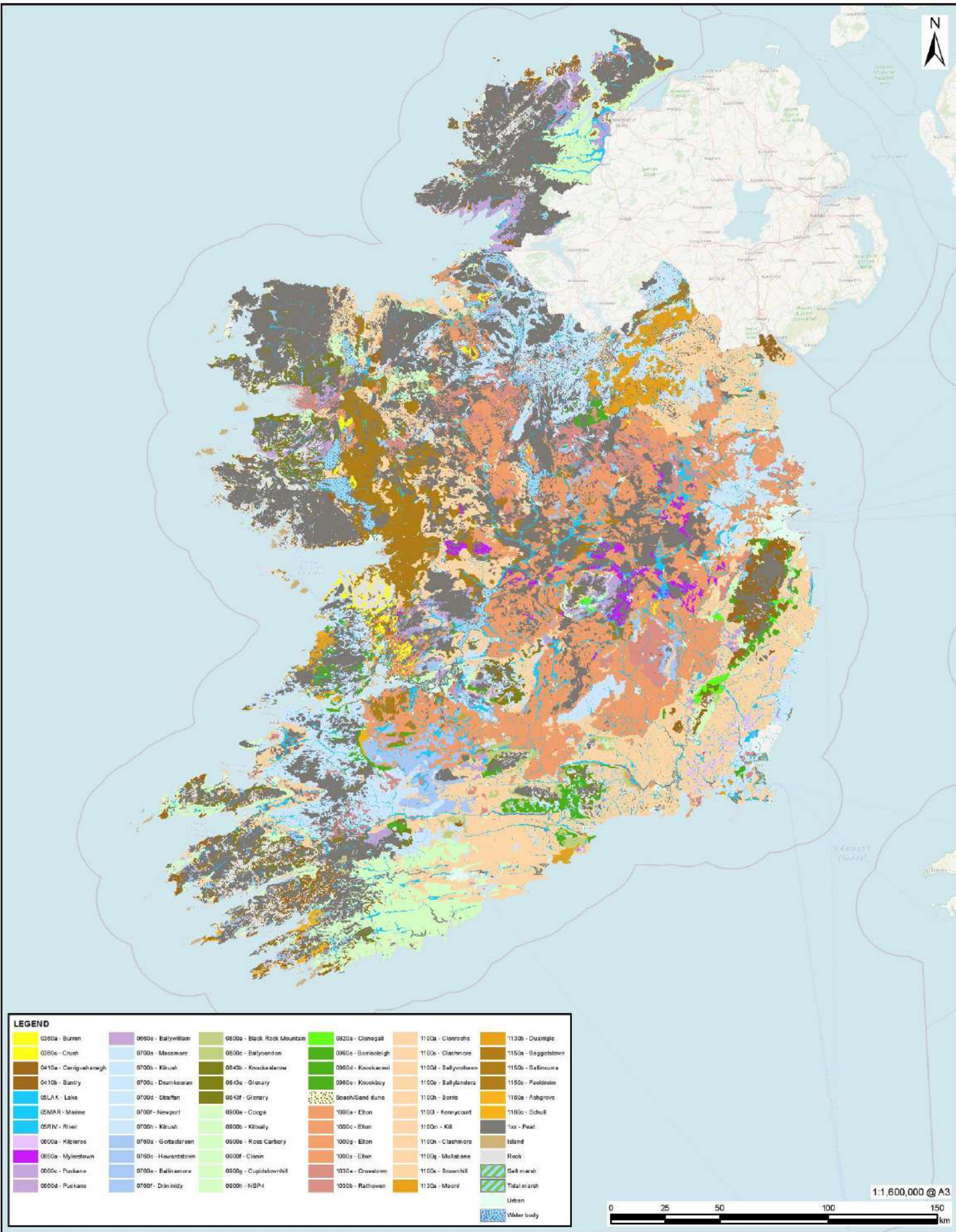
#### 4.5.3.1 Contaminated Soils

In the absence of mitigation, contaminated materials have the potential to adversely impact upon human health, water quality and biodiversity including habitats and species. There is potential for contamination at sites, especially where land-use (such as landfills and Seveso sites) occurred in the past in the absence of environmental protection legislation.

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<sup>36</sup> STRIVE Research Programme 2007-2013.

<sup>37</sup> EPA (2022). *Irish Soil Information System*.



LEGEND									
0360a - Burren	0690a - Ballywilliam	0830a - Black Rock Mountain	0920a - Clonegall	1100a - Clonroche	1130b - Duamglo				
0380a - Cruth	0700a - Messmore	0830c - Ballysandon	0960a - Borrisoleigh	1100c - Clashmore	1150a - Begginstown				
0410a - Carrigrohaneigh	0700c - Kilrush	0840b - Knockadonon	0960d - Knockacree	1100d - Ballysheehan	1150b - Ballincurea				
0410b - Bantry	0700c - Drumkeeran	0843a - Glenary	0960e - Knockboy	1100e - Ballylanders	1150c - Faoiltoin				
05LAK - Lake	0700d - Straffan	0843f - Glenary	Scrub/Sand dune	1100f - Boro	1160a - Ashgrove				
05MAR - Marine	0700f - Newport	0890a - Cooga	1000a - Elton	1100g - Keenycourt	1180c - Schull				
05RN - River	0700h - Kilrush	0890b - Kilsally	1000c - Elton	1100h - Kill	1a - Peat				
0600a - Kibberoe	0780a - Gortadrome	0890c - Ross Carbery	1000g - Elton	1100i - Clashmore	Island				
0650a - Mylenstown	0780c - Howardstown	0890f - Clooin	1000x - Elton	1100j - Mullabane	Rock				
0650c - Puckane	0780c - Ballinacorney	0890g - Cupidstownhill	1030a - Cronstown	1100k - Brownhill	Salt marsh				
0650d - Puckane	0780f - Driestiddy	0890h - NBP4	1030b - Rathowen	1100l - Mooril	Tidal marsh				
					Urban				
					Water body				



**CLIENT**  
 Transport Infrastructure  
 Ireland

**PROJECT**  
 Strategic Environmental Assessment  
 (SEA) for the draft National Cycle  
 Network Plan

**PROJECT NUMBER**  
 60657618

**ISSUE PURPOSE**  
 DRAFT

**FIGURE TITLE**  
 SIS National Soils

**FIGURE NUMBER**  
 Figure 5.4

**NOTES**  
 Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA.  
 Data is for public use under Creative Commons CC-BY 4.0

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#### 4.5.4 Geology

Geological Survey, Ireland (GSI) provides information on bedrock, subsoil, aquifer classifications and vulnerability. There are many natural factors that influence the composition of soils, notably bedrock, climate and topography. Geological understanding and interpretation are best achieved on the ground at sites where rocks and landforms are displayed.

Bedrock across a large portion of central Ireland is comprised of Carboniferous limestones, which were deposited in tropical seas 350 million years ago, according to the GSI's 1:100,000 scale Bedrock Map Series.

Sandstone and shale (varying from 500-300 million years ago) are the next most prevalent lithology across Ireland, some of which are interspersed with basalt and rhyolite, followed by Ordovician to Devonian granite intrusions.

Bedrock in the south of Ireland is comprised of Devonian Old Red Sandstones, where thick layers of sediment were laid down in semi-arid and mountain river systems.

Bedrock in the north-west is comprised of much older Precambrian quartzites, gneisses, schists and granites, and other igneous intrusive rocks.

##### 4.5.4.1 Geological Heritage

The Irish Geological Heritage (IGH) Programme is a partnership between the GSI and the National Parks and Wildlife Services (NPWS), that is currently identifying / selecting the best national sites for Natural Heritage Area (NHA) designation, to represent the country's geology.

In Ireland, geological heritage is assessed under a framework of 16 themes which cover different time periods and aspects of geology. Some of these sites have been selected or recommended for eventual designation as geological NHAs.

The IGH also identifies many sites of national or local geological heritage importance, which are classed as County Geological Sites (CGS). CGS do not receive statutory protection like NHA but receive an effective protection from their inclusion in the planning system. Some of these sites overlap with SACs and some are already proposed Natural Heritage Areas (pNHAs).

Across Ireland there are currently 1,247 Geological Heritage Sites (includes both audited and unaudited site boundaries). These sites can be viewed online via the GSI's dedicated heritage map viewer<sup>38</sup>.

##### 4.5.4.2 Landslides

Landslide describes a wide variety of processes that result in the downward and outward movement of materials such as rock, earth, mud and peat under the force of gravity. The

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<sup>38</sup> Available at:

<https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=b245c2bd11a64162a1632ad6bccf8e34&scale=0>

potential impacts of landslides include injury / loss of human life, flooding and pollution to watercourses and impacts upon aquatic biodiversity.

According to GSI *landslide susceptibility mapping*, the majority of the country has a *low landslide susceptibility*, with the risk rising of *moderate to high landslide susceptibility* along the west coast of Ireland and Dublin and Wicklow Mountains. Many landslide events are associated with coastal, upland and peatland areas.

#### 4.5.4.3 Minerals and Aggregates

Minerals (e.g., iron and copper) and aggregates (e.g., sand and gravel) occur throughout the country. The GSI have a suite of data sources available that are useful in planning and assessing individual projects with regard to the environmental topic(s) of soil and / or material assets. These include:

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

#### 4.5.5 Summary of Future Baseline

- Agriculture is the primary Land-use Land Cover (LULC) type within Ireland (67.6%), followed by wetlands (14.9%) and forestry (11%)<sup>39</sup>.
- Land-use change is a major pressure impacting soils. Currently, there is no legislation which is specific to the protection of soil resources. The EU Soil Strategy for 2030<sup>40</sup> sets out a framework and concrete measures to protect and restore soils and ensure that they are used sustainably.
- There is pressure on land and soils for development and new infrastructure within the undeveloped areas.
- Soil sealing is the covering of the ground by an impermeable material. Soil sealing can potentially put biodiversity at risk, increase the risk of flooding and prevents natural drainage.
- Impacts on soil - erosion and contamination from intensive land-uses, such as agriculture and quarrying activities.
- Geological heritage sites need to be protected from development.

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<sup>39</sup> EPA (2022). *Land-use and Cover*.

<sup>40</sup> European Commission (EC) (2022). *Soil strategy for 2030*.

- Carbon stored in soils plays an important role in maintaining soil functionality, in water and air quality and in climate change.

## 4.6 Water

### 4.6.1 Introduction

Water is fundamental to all life; for humans, plants and animals alike. Water is a hugely important national resource that provides a multitude of benefits to the people of Ireland<sup>41</sup>. Ireland's rivers, lakes, estuaries and coastal waters are home to thousands of plant and animal species ranging from river insects and marine invertebrates to birds and animals<sup>42</sup>. In Ireland, there are 3,192 no. rivers, 818 no. lakes, 195 no. transitional waterbodies, 111 no. coastal waterbodies and 513 no. ground waterbodies classified as Water Framework Directive waterbodies<sup>43</sup>.

### 4.6.2 Water Framework Directive (WFD)

Trends in water quality in Ireland are mixed, and Ireland faces some considerable challenges to meet the requirements of the EU Water Framework Directive (WFD). The main mechanism for addressing water quality and meeting WFD objectives is the National River Basin Management Plan (RBMP) and its associated Programme of Measures.

Nearly half of the surface waters in Ireland are failing to meet the legally binding water quality objectives set by the WFD because of pollution and human disturbance<sup>44</sup>. The WFD goal is to maintain 'high' and 'good' status waters and prevent the deterioration of waterbodies.

The 2021 EPA (*Water Quality in 2020, An Indicators Report*) assessment of water quality in Ireland, finds that surface waters and groundwater's continue to be under pressure from human activity; particularly from nitrogen and phosphorous from urban wastewater discharges and agriculture<sup>45</sup>.

The WFD is transposed into Irish law by the following regulations:

- European Communities (**Water Policy**) Regulations, 2003 (S.I. No. 722 of 2003).
- European Communities Environmental Objectives (**Surface Waters**) Regulations, 2009 (S.I. No. 272 of 2009 as amended by S.I. No. 77 of 2019).
- European Communities Environmental Objectives (**Groundwater**) Regulations, 2010 (S.I. No. 9 of 2010 as amended by S.I. No. 366 of 2016).

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<sup>41</sup> EPA (2020). *Ireland's Environment - An Integrated Assessment 2020*.

<sup>42</sup> EPA (2020). *Ireland's Environment - An Integrated Assessment 2020*.

<sup>43</sup> DHPLG (2018). *River Basin Management Plan for Ireland 2018-2021*.

<sup>44</sup> EPA (2020). *Ireland's Environment - An Integrated Assessment 2020*.

<sup>45</sup> EPA (2021). *Water Quality in 2020, An Indicators Report*.



- European Communities (**Good Agricultural Practice for Protection of Waters**) Regulations, 2010 (S.I. No. 610 of 2010).
- European Communities (Technical Specifications for the Chemical Analysis and Monitoring of Water Status) Regulations, 2011 (S.I. No. 489 of 2011).
- European Communities (**Water Policy**) Regulations 2014 (S.I. No. 350 of 2014).
- European Communities (**Drinking Water**) Regulations 2014 (S.I. No. 122 of 2014).
- European Communities (**Marine Strategy Framework**) Regulations (S.I. No. 249 of 2011).
- Statutory Rules of Northern Ireland. *The Private Water Supplies Regulations (Northern Ireland) 2017, No. 211 of 2017.*

#### 4.6.2.1 Water Framework Directive Protected Areas

Article 6 of the WFD requires that Registers of Protected Areas (RPAs) are compiled for a number of waterbodies or part of waterbodies which must have extra controls on their quality by virtue of how their waters are used by people and by wildlife. This register is split into five categories as outlined by the EPA:

- Areas designated for the **abstraction of water** intended for human consumption under Article 7;
- Areas designated for the **protection of economically significant aquatic species** (i.e. shellfish and freshwater fish);
- Bodies of water designated as **recreational waters**, including areas designated as bathing waters under Directive 76/160/EEC;
- **Nutrient-sensitive areas**, including areas designated as vulnerable zones under Directive 91/676/EEC and areas designated as sensitive areas under Directive 91/271/EEC; and
- Areas designated for the **protection of habitats or species** where the maintenance or improvement of the status of water is an important factor in their protection, including relevant European sites (Natura 2000) designated under Directive 92/43/EEC and Directive 79/409/EEC (see **Figure 5.3**).

#### 4.6.3 River Basin Management Plan

The second cycle of the River Basin Management Plan (RBMP) ran from 2018 to 2021. Public consultation for the draft River Basin Management Plan 2022-2027 closed on 31<sup>st</sup> March 2022. This draft plan sets out how Ireland will manage its water resources and catchments between

2022 and 2027. The next RBMP, must address the main pressures on water quality - agriculture, hydromorphology (physical changes), forestry and urban wastewater discharges. The draft plan sets out actions that Ireland will take to improve water quality and achieve 'good' ecological status in waterbodies (rivers, lakes, estuaries and coastal waters) by 2027. The purpose of the plan was to identify waterbodies at risk of failing to meet the objectives of the WFD and include a programme of measures to address and alleviate these pressures. Ireland is required to produce a RBMP under the WFD.

In Ireland water quality data is also collected by the EPA to provide an overall status of water quality. This monitoring programme, as part of the WFD, assesses water quality but also water trends of rivers in relation to their ecological status and includes biological, physico-chemical and hydro-morphological status.

Hydromorphological modification has emerged in Ireland as being the second most common significant pressure on surface waterbodies. Overall, it is acknowledged that while the measures for hydromorphology are broadly positive, much of the focus is on barriers, which is an important aspect but mainly from the perspective of fish status. This is one of many biological quality elements which together contribute to overall WFD ecological status.

#### 4.6.4 Water Quality Status

The WFD defines '*overall surface water status*' as the general status of a body of surface water, determined by the poorer of its ecological status<sup>46</sup> and its chemical status<sup>47</sup>. In order to achieve 'good surface water status' both the ecological status and the chemical status of a surface waterbody need to be at least 'good'.

The 2021 EPA report '*Water Quality in 2020, An Indicators Report*' has the most recent assessment of water quality in Ireland. The following information was collected between 2013 and 2018:

- 53% of surface waters were in satisfactory ecological status; and
- 47% of surface waters were in moderate, poor or bad ecological status.

This means that nearly half of the surface waterbodies in Ireland are failing to meet the objectives of the WFD, because of pollution and other human disturbance. Coastal waters had the highest percentage of waters in good or better ecological status (80%) followed by rivers (53%), lakes (50.5%) and estuaries (38%), which have the worst water quality<sup>48</sup>.

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<sup>46</sup> **Ecological status** is an expression of the structure and functioning of aquatic ecosystems associated with surface waters.

<sup>47</sup> **Chemical Status** is a pass/fail assignment with a failure defined by a face-value exceedance of an Environmental Quality Standards (EQS) for one or more Priority Action Substances (PAS) listed in Annex X of the Water Framework Directive (WFD).

<sup>48</sup> EPA (2021). *Water Quality in 2020, An Indicators Report*.

The latest water quality assessment (2013-2018) shows that there is a continuing decline in high status waterbodies, and an increase in the number of waterbodies in poor ecological health<sup>49</sup>. The loss of high-status waterbodies has implications for the survival of certain protected species sensitive to small changes in water quality such as the freshwater pearl mussel (*Margaritifera margaritifera*)<sup>50</sup>.

The number of bad status waterbodies has slightly fallen over each assessment period, but there are still 27 no. waterbodies in this category. These include nine rivers, 11 no. lakes and seven estuarine waterbodies<sup>51</sup>.

Groundwater quality in Ireland is good, with 92% of groundwater waterbodies having good chemical status. Waterbodies that fail to meet these objectives (38 no. waterbodies) are typically associated with historical contamination from industrial sites<sup>52</sup>.

The figure below highlights the WFD River Waterbody Status for Ireland.

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<sup>49</sup> EPA (2021). *Water Quality in 2020, An Indicators Report*.

<sup>50</sup> EPA (2021). *Water Quality in 2020, An Indicators Report*.

<sup>51</sup> EPA (2021). *Water Quality in 2020, An Indicators Report*.

<sup>52</sup> EPA (2021). *Water Quality in 2020, An Indicators Report*.



### 4.6.5 Flood Risk

Floods are caused by a combination of events including overflowing riverbanks, heavy rains, coastal storms or blocked or overloaded drainage systems and an increase in development and impermeable surfacing. Floods are a natural and inevitable part of life that pose a risk to human life and well-being, property and the environment, but climate change is contributing to increased events such as rising sea levels, coastal erosion, storm surges, etc.

In the *'Planning System and Flood Risk Management', Guidelines for Planning Authorities*, the probability of a flood event taking place is recognised through the classification of 'Flood Zones' which indicate a high, moderate or low risk of flooding from fluvial or tidal sources. The Office of Public Works (OPW) is the lead State body for flood risk management.

The National *Catchment Flood Risk Assessment and Management* (CFRAM) Programme has been the principle vehicle to deliver on Ireland's commitments under the EU Floods Directive (2007/60/EC). Each CFRAM study has produced flood maps, flood risk management objectives and Flood Risk Management Plans (FRMPs). The OPW's national flood information portal (floodinfo.ie), provides location specific access to flood risk and flood management information. This flood portal will be used to identify any potential flood risk areas, as the Draft NCN Plan develops.

Groundwater flooding can also be a serious issue and occurs when the water table rises above the level of the land, which results from the natural subsurface drainage system being unable to drain away rainfall quickly enough. The GSI<sup>53</sup> has initiated a new project called GWClimate<sup>54</sup>. This project aims to improve the national capacity to understand how groundwater resources may respond to climate change and support scientifically informed decision making in the groundwater sector. Climate change will play a major role in shaping Ireland's water resources and natural environment in coming decades. Monitoring and early detection of these pressures is key to informing successful adaptation strategies to minimize adverse impacts.

### 4.6.6 Summary of Future Baseline

- Nearly half of the surface waterbodies in Ireland are failing to meet the objectives of the WFD, because of pollution and other human disturbance.
- The latest water quality assessment (2013-2018) shows that there is a continuing decline in high status waterbodies, and an increase in the number of waterbodies in poor ecological health.

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<sup>53</sup> GSI, in collaboration with the Institute of Technology Carlow.

<sup>54</sup> Available at: <https://www.gsi.ie/en-ie/programmes-and-projects/groundwater/projects/gwclimate/Pages/default.aspx>

- Population growth, development, and climate change will likely increase pressure on the WFD objectives and water resources.
- Surface water and groundwater contamination arising through poor working practices, and leakages.
- Hydromorphological modification is the second most common significant pressure on surface waterbodies. Hydromorphological issues were identified as a pressure in 28% of 'at risk' waterbodies; of these 86% were due to channelisation and land drainage.
- Climate change will likely increase flooding which could lead to adverse effects on water quality from overflowing of storm water drains and leaching of contaminated soils into surface waters.

## 4.7 Air Quality

### 4.7.1 Introduction

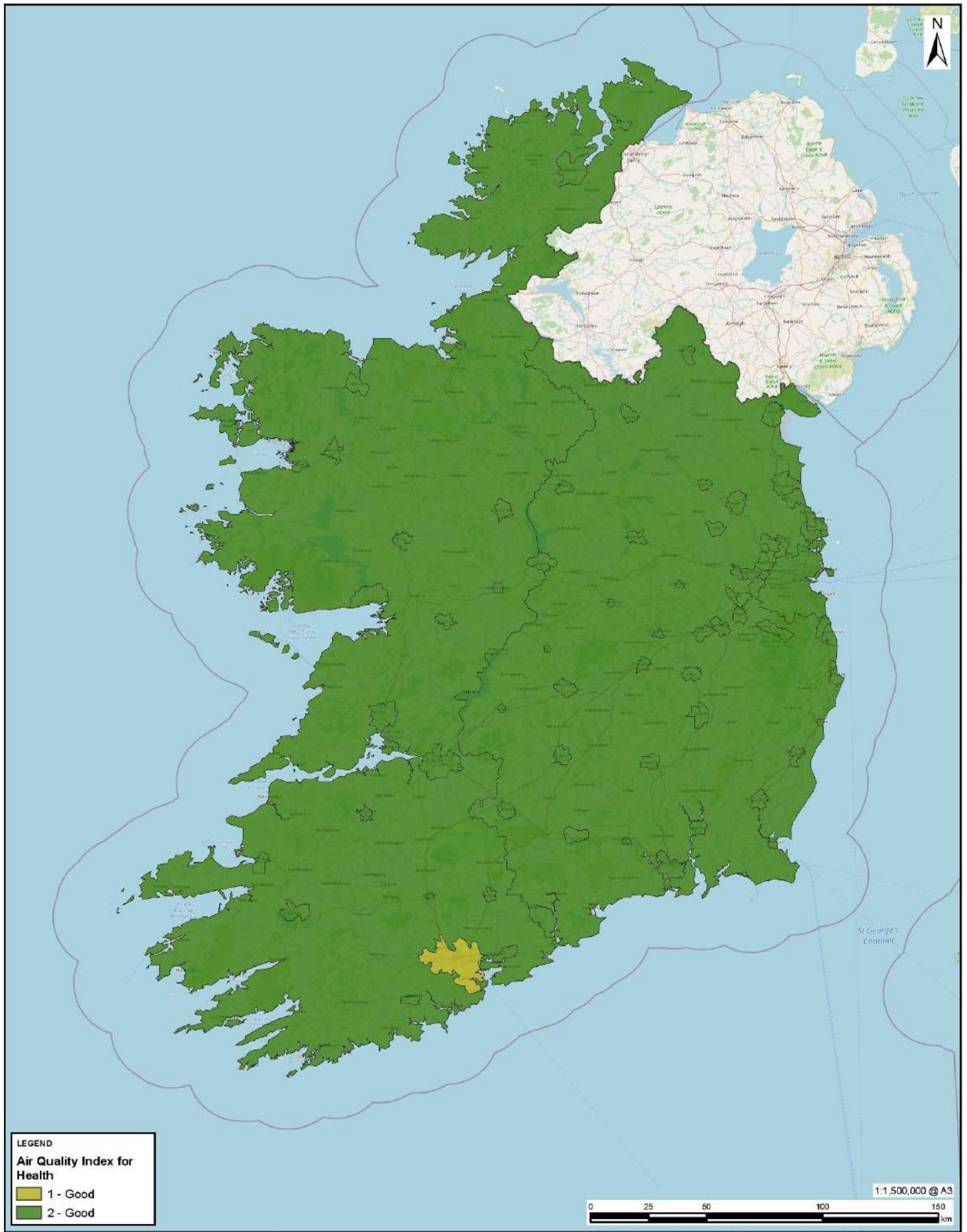
Air quality legislation in Ireland highlights the need 'to avoid, prevent or reduce harmful effects on human health and the environment as a whole'.

Air quality impacts can be on a local scale or a regional / national scale. Local air quality impacts can have significant health impacts.

Ireland has good air quality which is rated amongst some of the best in the EU. This is largely due to the country's prevailing wind which blows from a westerly direction in from the Atlantic and an absence of large cities or industry. The EPA is responsible for monitoring the nation's levels of air pollutants within four zones as follows:

- Zone A: Dublin;
- Zone B: Cork;
- Zone C: Other cities and large towns in Ireland; and
- Zone D: Rural Ireland.

The figure below highlights the EPA Air Quality Index for Health (AQIH) map of Ireland.



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## 4.7.2 Air Quality Standards

The framework for the EU clean air policy aims to protect EU citizens from adverse health effects of poor air quality, as well as protect ecosystems. This framework uses a combination of standards and directives to regulate sources of air pollutants, to reduce national emission quantities and set limit values for levels of air pollutants in ambient air.

The applicable standards in Ireland include the *Air Quality Standards Regulations 2011*, which incorporate EU Directive 2008/50/EC, which has set limit values for NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, benzene and CO.

The 2013 EU *Clean Air Programme for Europe (CAFE)* provided a comprehensive review of emissions-related elements. As a result, the new National Emission Ceilings (NEC) Directive (2016/2284/EU) replaced the earlier NEC Directive (2001/81/EC)<sup>55</sup>. The NEC Directive set emissions reduction commitments for 2020 and 2030 based on a reduction from 2005 emissions. The reduction commitments are designed to reduce the health impacts of air pollution by half compared with 2005.

The NEC Directive also requires that Member States draw up a National Air Pollution Control Programme (NAPCP) to help implement air quality plans established under the Ambient Air Quality Directives (2008/50/EC and 2004/107/EC).

### 4.7.2.1 Ambient Air Quality

The EPA's *National Ambient Air Quality Monitoring Programme (AAMP)* was established in 2017. The EPA has worked with local authorities and other public bodies, to establish 96 air monitoring stations, 18 of which were installed in 2020.

The 2021 EPA report '*Air Quality in Ireland 2020*' states that Ireland was compliant with EU legal limits in 2020, largely due to the reduction in traffic due to COVID-19 restrictions, however monitored levels were above the WHO air quality guideline values at 52 monitoring stations, due to the burning of solid fuels for home heating<sup>56</sup>. Solid fuels (e.g., coal, peat and wood) produce fine particulate matter emissions when burned in open fires or stoves. Fine particulate matter in the air greatly impacts respiratory and cardiovascular health<sup>57</sup>.

Monitored nitrogen dioxide levels were reduced in 2020 when compared to previous years. Reductions of up to 50% compared to 2019 were observed at many traffic monitoring stations<sup>58</sup>. Recent figures from the CSO show that traffic volumes have yet to return to pre-COVID-19 levels. However, 2021 traffic levels are not significantly lower than 2019 levels<sup>59</sup>.

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<sup>55</sup> EPA (2020). *Ireland's Environment - An Integrated Assessment 2020*.

<sup>56</sup> EPA (2021). *Air Quality in Ireland 2020*.

<sup>57</sup> EPA (2021). *Air Quality in Ireland 2020*.

<sup>58</sup> EPA (2021). *Air Quality in Ireland 2020*.

<sup>59</sup> EPA (2021). *Air Quality in Ireland 2020*.



Key to improving air quality in Ireland is to reduce transport pollution by reducing traffic volumes.

Below is a summary of results for 2020, from the 2021 EPA report - *Air Quality in Ireland 2020*:

- **PM<sub>10</sub>** was measured at 67 no. monitoring stations in 2020 and there were no exceedances of the EU limit values (annual or daily).
- The World Health Organisation (WHO) **PM<sub>10</sub>** air quality guideline annual value was exceeded at one monitoring station.
- The WHO **PM<sub>10</sub>** air quality guideline daily value was exceeded at 14 no. monitoring stations.
- A WHO **PM<sub>10</sub>** air quality guideline value (either daily or annual) was exceeded at a total of 14 no. monitoring stations.
- **PM<sub>2.5</sub>** was measured at 64 monitoring stations in 2020 and there were no exceedances of the EU annual limit.
- The WHO **PM<sub>2.5</sub>** air quality guideline annual value was exceeded at nine monitoring stations.
- The WHO **PM<sub>2.5</sub>** air quality guideline daily value was exceeded at 34 no. monitoring stations.
- A WHO **PM<sub>2.5</sub>** air quality guideline value (either daily or annual) was exceeded at a total of 34 no. monitoring stations.

#### 4.7.3 Summary of Future Baseline

- New development and infrastructure provision has the potential to increase the amount of traffic on the key routes in Ireland, with the potential for increasing pollutants.
- Cleaner vehicles, including the update of electric vehicles have the potential to lead to improvements in air quality over the longer term. The implementation of EV charging points across Ireland will likely lead to positive effects in terms of addressing EV challenges, including through increasing public confidence in charging infrastructure.

## 4.8 Climate Change

### 4.8.1 Introduction

Climate change refers to a long-term, large-scale change in global or regional climate patterns. In recent years, global temperatures have been rising. Urgent action is needed to address climate change and to move Ireland towards a low carbon, climate resilient economy and society.

Human activity has had a pronounced effect on the level of greenhouse gases (GHG) in the atmosphere. Activities such as the burning of fossil fuels for heating, energy and transport, in addition to other activities such as agriculture, construction and waste, have caused a rise in the levels of GHGs in the atmosphere.

In Ireland, the expected effects of climate change are increased frequency of extreme weather events. This will include a 20%-30% increase in precipitation, greater rainfall and an average annual temperature increase of ~2°C. The potential impacts of climate change could have serious consequences for both people and infrastructure along Ireland's coastal areas as well as its rivers<sup>60</sup>.

### 4.8.2 Ireland's Policy Context

In 1994, Ireland ratified the United Nations Framework Convention on Climate Change (UNFCCC) and the *Kyoto Protocol* (1997) formally in 2002<sup>61</sup>. In 2012, Ireland agreed to limit the net growth of the six GHGs under the *Kyoto Protocol* to 20% below the 2005 level over the period 2013 to 2020<sup>62</sup>, for the purposes of the EU burden sharing agreement.

The most recent Conference of the Parties to the Convention (COP26) summit took place in Glasgow, Scotland in November 2021. The COP summit brings parties together to accelerate action towards the goals of the Paris Agreement and the UNFCCC.

In Ireland, the National Policy Position on Climate Action and Low Carbon Development and the Climate Action and Low Carbon Development Act 2015 provide the policy framework for climate action at national level.

The National Policy Position provides a high-level policy direction for the adoption and implementation by Government of plans to enable the State to pursue the transition to a low carbon, climate resilient and environmentally sustainable economy by 2050.

The Climate Action and Low Carbon Development Act 2015<sup>63</sup> seeks to address the issue of climate changes and establishes the national goal to move to a low carbon, climate resilient

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<sup>60</sup> GOI (2019). *Flood Risk Management Climate Adaptation Plan*.

<sup>61</sup> UNFCCC (1997) *Kyoto Protocol*. UNFCCC (1999). *Doha Climate Change Conference*.

<sup>62</sup> UNFCCC (2012). *Doha Climate Change*.

<sup>63</sup> Government of Ireland (2015).

and environmentally sustainable economy. Under this Act the National Mitigation Plan<sup>64</sup> and the National Adaptation Framework<sup>65</sup> were established. The Climate Action and Low Carbon Development (Amendment) Act 2021 was signed into law in 2021. This Act aims to amend the 2015 Act in order to strengthen the governance framework on climate action by the State through the introduction of a legally binding interim target of 51% reduction by 2030 relative to a baseline of 2018.

Ireland's long-term climate policy framework was set out in the National Mitigation Plan (2017). The National Mitigation Plan<sup>66</sup> set out the initial steps to achieve the level of decarbonisation required, with a key focus to reduce emissions from its largest contributing sectors: agriculture, transport and energy. However, in July 2020 the Supreme Court held that the plan does not comply with Ireland's obligations under the Climate Action and Low Carbon Development Act 2015 to give sufficient detail about achieving the national transition objective of a low carbon economy by the end of 2050.

#### 4.8.3 Ireland's Greenhouse Gas (GHG) Overview

Since 2011, emissions in Ireland have trended upwards again with an overall peak in emissions reported in 2018. The 2020 European Environment Agency (EEA) report '*Trends and Projections in Europe 2020*' outlines that as of 2020, Ireland has the 4<sup>th</sup> highest per capita GHG emissions in the EU<sup>67</sup>.

The agricultural sector is the single largest contributor of the Ireland's GHG emissions at 37.1% in total (in 2020). The transport and energy sectors are the second and third at 17.9% and 15% largest respectively, with the transport sector the fastest growing source of GHG emissions. The residential and manufacturing combustion sectors account for 12.3% and 7.8% respectively. The remainder includes Industrial processes at 3.7%, F-Gases at 1.4%, Commercial services at 1.6%, Public services at 1.6% and waste at 1.6%<sup>68</sup>.

During 2020, GHG emissions in Ireland decreased by only 3.6%, despite the economic and social impact of the COVID-19 pandemic. A few key drivers of the recent reductions in GHG emissions include the reduced use of peat and the increased power generation from renewable sources in the electricity sector, reduced transport emissions (due to COVID-19 restrictions) and decreases in combustion and process emissions due to reduced cement production (due to the extended closures of cement plants during COVID-19 restrictions).

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<sup>64</sup> The Plan was quashed by the Supreme Court on 31 July 2020 (Appeal No. 205/10).

<sup>65</sup> DCCAE (2017) *National Mitigation Plan*. DCCAE (2018). *National Adaptation Framework*.

<sup>66</sup> The Plan sets out the Government's approach to reducing greenhouse gas emissions.

<sup>67</sup> EEA (2020). *Trends and Projections in Europe 2020*.

<sup>68</sup> DECC (2021). *Climate Action Plan 2021*

In 2020, there were increased emissions in the residential sector driven by an increased number of heating days in 2020 (associated with a colder winter) and increased working from home.

#### 4.8.3.1 Climate Change - Emissions in Ireland

The European Commission's (EC) *2050 Low-Carbon Economy Roadmap*<sup>69</sup> determined that all sectors must contribute towards the EU 2050 target of an 80% reduction in GHG emissions, but the relative contribution of individual sectors will be limited according to their technological and economic potential.

At the end of 2018, there were over 2.71 million licensed<sup>70</sup> vehicles on Irish roads. Private cars accounted for the majority of these vehicles (over 77%); goods vehicles accounted for 13%, with agricultural vehicles and motorcycles collectively representing a further 4.3%<sup>71</sup>.

#### 4.8.4 Summary of Future Baseline

- Climate change has the potential to increase the occurrence of extreme weather events in Ireland, with increases in mean summer and winter temperatures, increases in mean precipitation in winter and decreases in mean precipitation in summer. This is likely to increase the risks associated with climate change, with an increased need for resilience and adaptation.
- In terms of climate change mitigation, per capita emissions are likely to continue to decrease as energy efficiency measures, renewable energy production and new technologies become more widely adopted. In particular, an ongoing increase in the use of electric and plug-in hybrid vehicles has the potential to reduce emissions from transport.
- Ireland is also failing to meet EU targets on ammonia emissions under the National Emissions Ceiling (NEC) Directive. Agriculture is the main source of national ammonia emissions.
- The COVID-19 pandemic has highlighted the need to accelerate a shift to active travel with an upscaling in infrastructure provisions for pedestrians and cyclists in particular.

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<sup>69</sup> EC (2011). *A Roadmap for moving to a competitive low carbon economy in 2050*.

<sup>70</sup> Taxed

<sup>71</sup> DT (2019). *Tourism and Sport, Bulletin of Vehicle and Driver Statistics*.

## 4.9 Cultural Heritage

### 4.9.1 Introduction

The physical traces left in the landscape by previous generations in archaeological monuments and sites and in historic buildings, townscapes and vernacular structures forms part of the tangible cultural heritage linking the past and present.

### 4.9.2 Archaeological Heritage

In Ireland, archaeological sites are legally protected under the following legislation:

- The National Monuments Acts.
- The National Cultural Institutions Act 1997.
- The Planning and Development Act 2000 (as amended).

#### 4.9.2.1 Record of Monuments and Places (RMPs)

The Record of Monuments and Places (RMPs) is one of the primary sources of information for known archaeological features. The RMP is the statutory list of all known archaeological monuments in Ireland as compiled by the Archaeological Survey of Ireland, part of the Department of Housing, Local Government and Heritage. The RMPs was established under the National Monuments Acts 1930 to 2004.

In addition to the location of known upstanding monuments, it also documents the location of destroyed monuments and the location of possible sites. Any monuments listed under the RMPs have legal protection and the Minister must be notified if there is any work taking place at, or in relation to, a Recorded Monument.

As of 2016 there were 80,000 no. sites recorded in the RMPs. Of these RMPs, c. 1,000 no. are under State care.

#### 4.9.2.2 Sites and Monuments Record (SMR)

An additional key source of information for cultural heritage comes in the form of the Sites and Monuments Record (SMR). With 160,528 no. records to archaeological monuments, not all sites within the SMR are included in the RMP. The figure below highlights the concentrations of sites listed on the SMR in Ireland.

### 4.9.3 Architectural Heritage

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

are of technical, historical, archaeological, artistic, cultural, scientific, social, or technical interest”<sup>72</sup>.

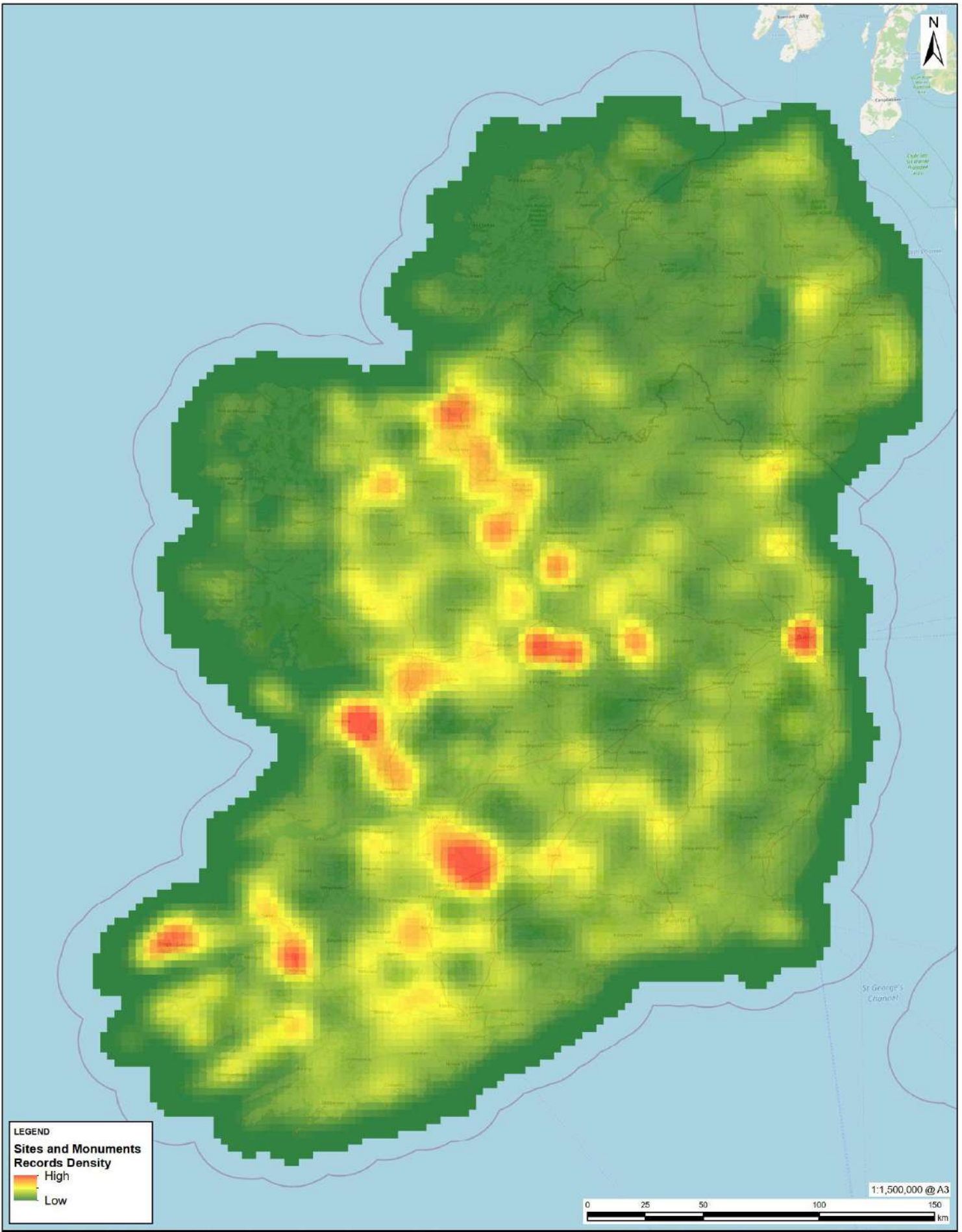
#### **4.9.3.1 National Inventory of Architectural Heritage (NIAH)**

Established under the Architectural Heritage and Historic Monuments Act 1999, the National Inventory of Architectural Heritage (NIAH) identifies, records and evaluates the post-1700 architectural heritage of Ireland, as an aid in the protection and conservation of the built heritage.

NIAH surveys provide the basis for the recommendations of the Minister for the Environment, Heritage and Local Government to the planning authorities for the inclusion of particular structures in their Record of Protected Structures (RPS). There is c. 43,300 no. NIAH records on the national inventory.

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<sup>72</sup> DHLGH (2021). *National Inventory of Architectural Heritage*.



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### 4.9.3.2 Record of Protected Structures (RPS)

The Record of Protected Structures is a primary source of information for known architectural heritage. The NIAH surveys provide the basis for the recommendations of the Minister (Housing, Local Government and Heritage) to planning authorities for the inclusion of particular structures in their RPS. Under Section 51 of the Planning and Development Act (as amended) local authorities are required to compile and maintain an RPS in their development plans. Sites included in the RPS are awarded automatic protection and may not be demolished or materially altered without grant of permission under the Planning Acts.

Established under the Architectural Heritage and Historic Monuments Act 1999, the purpose of the NIAH is to identify, record, and evaluate the post-1700 heritage of Ireland.

### 4.9.3.3 Architectural Conservation Areas (ACAs)

Architectural Conservation Areas (ACAs) are areas protected for their special characteristics and distinctive features. They are designated under Section 81 of the Planning and Development Act (as amended). Details on ACAs can be found in County Development Plans.

### 4.9.4 UNESCO World Heritage Sites

In Ireland there are two registered UNESCO World Heritage Sites located in Ireland:

- Brú na Bóinne, County Meath; and
- Skellig Michael, County Kerry.

In addition to the two above, seven further sites have been suggested by the Irish Government as appropriate for putting forward for UNESCO World Heritage Site status. These are included on the 'tentative list' of properties which are considered to be cultural and / or natural heritage of outstanding universal value and therefore suitable for inscription on the World Heritage List.

The seven sites are as follows:

- The Burren.
- The Historic City of Dublin.
- The Céide Fields and North-West Mayo Boglands.
- Western Stone Forts.
- The Monastic City of Clonmacnoise and its Cultural Landscape.
- Early Medieval Monastic Sites.
- The Royal Sites of Ireland: Cashel, Dún Ailinne, Hill of Uisneach, Rathcroghan Complex, and Tara Complex.



## 4.9.5 Summary of Future Baseline

- Future growth in Ireland, including housing, employment and infrastructure provision, has the potential to impact on the fabric and setting of heritage assets. This includes through inappropriate location, design and layout.
- Increasing traffic levels associated with an increase in population has the potential to negatively impact heritage assets.
- However, new development and infrastructure provision need not be harmful to the significance of a heritage asset; it also provides opportunities to better reveal assets' cultural heritage significance and enhance their settings.

## 4.10 Landscape and Visual

### 4.10.1 Introduction

Landscape is the context in which all change takes place and helps to create a unique sense of place or identity within an area. Landscape supports a wide range of ecological habitats despite growth in population.

Landscapes, in general terms, are areas that are perceived by people which are made up of a number of layers:

- landforms that are the result of geological and geomorphological activity;
- land cover, which can include natural forces, such as vegetation and water, and manmade settlements; and
- human values, which are a result of human understandings and interactions with landform and land cover.

The landscape of Ireland is varied with a mix of lowland and upland, rivers, lakes and shores. The majority of uplands in Ireland are close to the coast, with 45 peaks which exceed 750m and of which are within 56km from the coast. However, most of the landmass of Ireland, particularly the centre, is low-lying land. Less than 5% of the total landmass lies above 500m and over 80% is below 200m.

### 4.10.2 Landscape Assessment

The *European Landscape Convention*, also known as the Florence Convention, promotes the protection, management and planning of European landscapes and organises European co-operation on landscape issues. The convention was adopted on 20 October 2000 in Florence (Italy) and came into force on 1 March 2004<sup>73</sup>.

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<sup>73</sup> Council of Europe.

Ireland has signed the *European Landscape Convention* and by law, Ireland is required to undertake general measures to recognise landscapes, establish landscape policies with public participation and to integrate landscape into its existing policies.

In 2015, a *National Landscape Strategy for Ireland 2015-2025*<sup>74</sup> was published, in line with the European Landscape Convention. The key objectives of this Strategy are the recognition of landscape in law and the provision of a policy framework to put measures in place for the management and protection of landscape and the production of a national Landscape Character Assessment (LCA). Goals of producing LCAs at local and intra-local level have made little progress. These LCAs act as guides to inform landscape policy, action plans and local authority development plans.

Without national or regional guidance, local authorities currently conserve and protect scenic value as areas of high amenity, high sensitivity and areas of outstanding natural beauty. However, this approach is uncoordinated and can lead to different prioritisations in neighbouring counties.

#### **4.10.3 Habitat and Landscape Features of Importance for Biodiversity**

There are many habitats and important landscape features that are of particular importance for landscape character throughout Ireland. Such areas include, hedgerows, woodlands and other field boundary types such as stone walls and ditches, rivers, streams and riparian zones, canals and wetlands.

It is important that these areas are protected and enhanced where possible, as these landscape features and habitats cannot be sustained in isolation from one another as they provide ecological 'corridors' that support the movements of species necessary to maintain biodiversity.

#### **4.10.4 Summary of Future Baseline**

New infrastructure provision across Ireland has the potential to lead to incremental but small changes in landscape character and quality. This includes from the loss of landscape features and areas with an important visual amenity value. Increasing traffic levels associated with an increase in population also has the potential to negatively impact landscape character and tranquillity.

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<sup>74</sup> DAHG (2015). *National Landscape Strategy 2015-2025*.

## 4.11 Transboundary Effects

### 4.11.1 Introduction

The SEA has considered, where relevant and / or appropriate, potential transboundary effects relating to the NCN Plan in Northern Ireland.

The second State of the Environment Report for Northern Ireland (2013) - *From Evidence to Opportunity* provides a five-year update and commentary on various indicators across a number of themes to provide an evidence-based assessment of the state of the environment.

The *Northern Ireland Environmental Statistics Report* (May 2022)<sup>75</sup> provides an annual update to the figures and provides further information around the trends outlined in the State of the Environment Report for Northern Ireland.

The geographical area of Northern Ireland totals 14,150 km<sup>2</sup>, which is approximately 12% of the land area of the island of Ireland and less than 6% of the UK<sup>76</sup>. Northern Ireland has a territorial sea area of 7,189 km<sup>2</sup>. Both the land and marine environments contain a wide variety and diversity of natural and historic features which influence human activities and opportunities<sup>77</sup>.

Air quality continues to improve, water quality has benefitted substantially from improved effluent controls, however in other areas, such as reversing the decline in biodiversity and meeting key objectives for landscapes, habitats for example, significant challenges remain<sup>78</sup>.

The key issues relating to the NCN Plan are similar to those outlined under each theme in the previous sections but are primarily related to the environment in Northern Ireland in close proximity to the border. **Table 4.3** presents a summary of the baseline environment in Northern Ireland.

**Table 4.3: Northern Ireland Baseline Environment**

SEA Theme	Baseline Summary <sup>79 80</sup>
<b>Biodiversity</b>	<ul style="list-style-type: none"> <li>• There are 58 SACs, 16 SPAs and 20 Ramsar sites in Northern Ireland.</li> <li>• Some designations in the Republic of Ireland, such as Carlingford Lough SPA and Carlingford Shore SAC and Lough Melvin SAC, extend into Northern Ireland and as such present potential for transboundary effects.</li> <li>• Given the potential for transboundary impacts to SACs and SPAs in Northern Ireland, these sites are also considered and are listed in the NIS.</li> <li>• The total marine protected sites – 21,168 hectares in 2021/22.</li> <li>• The total terrestrial protected sites – 34,835 hectares in 2021/22.</li> <li>• Figure 5.3 shows the locations of SACs and SPAs located within Ireland and Northern Ireland.</li> </ul>

<sup>75</sup> DAERA (2022). *Northern Ireland Environmental Statistics Report*.

<sup>76</sup> NIEA (2013). *A Second Assessment of the State of Northern Ireland's Environment*.

<sup>77</sup> NIEA (2013). *A Second Assessment of the State of Northern Ireland's Environment*.

<sup>78</sup> NIEA (2013). *A Second Assessment of the State of Northern Ireland's Environment*.

<sup>79</sup> DAERA (2022). *Northern Ireland Environmental Statistics Report*.

<sup>80</sup> NIEA (2013). *A Second Assessment of the State of Northern Ireland's Environment*.

## SEA Theme      Baseline Summary<sup>79 80</sup>

<b>Population and Human Health<sup>81</sup></b>	<ul style="list-style-type: none"> <li>The latest figures from the Northern Ireland Statistics and Research Agency (NISRA) show that in June 2020, the Northern Ireland population was estimated to be 1,895,500.</li> <li>The population increased by 1,800 people or 0.1% between mid-2019 and mid-2020.</li> <li>Over the decade mid-2010 to mid-2020, the population of Northern Ireland increased by a total of 90,700 people with an average year-on-year increase of 0.5%.</li> <li>According to the <i>Northern Ireland Environmental Statistics Report</i> (DAERA, 2022), the level of public concern about environmental issues was high in 2021/22, with 82% very or fairly concerned about the environment.</li> <li>According to the <i>Northern Ireland Environmental Statistics Report</i> (DAERA, 2022), illegal dumping of waste and litter was the biggest environmental concern for households in Northern Ireland in 2021/22.</li> <li>According to the Northern Ireland Environmental Statistics Report (DAERA, 2022), car travel continues to dominate the way we do most of our day-to-day travelling.</li> </ul>
<b>Land, Soils and Geology<sup>82</sup></b>	<ul style="list-style-type: none"> <li>The UK Land Cover Map 2007 shows the dominance of improved grassland and freshwater in Northern Ireland.</li> <li>Approximately, 70% of land in Northern Ireland devoted to agricultural activities.</li> <li>In Northern Ireland, diverse parent geology combined with the effects of glaciation and climatic history has created a wide diversity of soils.</li> <li>Northern Ireland has around 111,000 hectares (ha) of forest and woodland (8% of land cover), 52%, is managed by the Forest Service, an executive agency of DARD<sup>83</sup>.</li> <li>Peat accounts for c. 14% of the soil cover and plays an important role in local land and resource use.</li> <li>Agriculture is one of the cornerstones of the Northern Ireland economy.</li> <li>Northern Ireland is one of the most geologically diverse areas in the world from ancient sediments more than 600 million years old to glaciated valleys formed when ice retreated 14,000 years ago.</li> </ul>
<b>Water<sup>84</sup></b>	<ul style="list-style-type: none"> <li>In Northern Ireland, the Water (Amendment) (Northern Ireland) (EU Exit) Regulations 2019 ensures that the WFD (as transposed) and the various supporting pieces of water legislation continue to operate after 1 January 2021.</li> <li>As with Ireland's RBMP, Northern Ireland has moved into its third cycle of plan making for 2021-2027. The final RBMP due to be published in 2022.</li> <li>There are 571 waterbodies in Northern Ireland of these 496 are surface waterbodies: including 450 rivers, 21 lakes, and 25 transitional &amp; coastal waterbodies (Marine); the remaining 75 are groundwater bodies.</li> <li>In 2015, 147 (33%) of 450 river waterbodies were classified as good or high overall status.</li> <li>In 2018, 141 (31%) of river waterbodies were classified as good or high overall status.</li> <li>In 2021, no river waterbodies achieved good or high overall status.</li> <li>In 2021, 3 (14%) lakes were classified as good ecological status with 18 lakes (86%) classified as 'moderate or worse'.</li> <li>Transitional &amp; coastal waterbodies (Marine):</li> <li>In 2015, 1 (4%) waterbody achieved high ecological status and 8 (32%) achieved good ecological status.</li> <li>In 2018, 10 (40%) achieved good ecological status.</li> <li>In 2021, 10 (40%) achieved good ecological status.</li> <li>Lough Neagh at 412 km<sup>2</sup> is the largest freshwater lake in the British Isles.</li> <li>The majority of Northern Ireland's 650km of coastline is protected for its special interest and a number of our coastal species and habitats are recognised as internationally important.</li> <li>Water pollution incidents are investigated by Northern Ireland Environment Agency (NIEA).</li> </ul>

<sup>81</sup> NISRA (2021). *2020 Mid-year Population Estimates for Northern Ireland*.

<sup>82</sup> NIEA (2013). *A Second Assessment of the State of Northern Ireland's Environment*.

<sup>83</sup> Department of Agriculture, Environment and Rural Affairs.

<sup>84</sup> NIEA (2021). *Water Framework Directive Statistics Report*

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<b>Air Quality<sup>85</sup></b>	<ul style="list-style-type: none"> <li>• Air quality in Northern Ireland has improved substantially in recent decades.</li> <li>• In particular, concentrations of sulphur dioxide, a pollutant associated with coal and oil combustion, have declined significantly over the past twenty years.</li> <li>• However, some pollutants in some parts of Northern Ireland continue to exceed air quality objectives.</li> <li>• Ambient air quality in Northern Ireland is regulated by the Air Quality Standards Regulations (Northern Ireland) 2010 and their subsequent 2016 amendment.</li> <li>• There were 21 air quality monitoring stations that operated for all or part of 2021 in Northern Ireland.</li> <li>• Each was equipped with continuous monitoring equipment for one or more of the pollutants for which automatic methods are used: CO, NOx, SO2, PM10, PM2.5, O3, and black carbon, and/or a non-automatic sampler for PAH.</li> <li>• In 2021 there was no breach of the UK Strategy Objective or EU Limit Values of 40 µg/m3 for the annual mean concentration of particle matter (PM10).</li> <li>• Nitrogen oxides (NOx, which includes nitrogen monoxide NO and nitrogen dioxide NO2): from combustion of fuels, most importantly in transport and energy generation.</li> <li>• The NOx emitted by road transport, however, poses more of a problem because it leads to increased concentrations of NO2 at ground level in busy streets where people are present.</li> </ul>
<b>Climate Change<sup>86 87</sup></b>	<ul style="list-style-type: none"> <li>• In Northern Ireland the main sources of greenhouse gas emissions are agriculture, transport, energy supply and residential combustion. In recent years most sectors have decreased except for transport and land use change.</li> <li>• The UK Climate Change Act commits the UK to at least an 80% reduction by 2050 (from 1990 levels). Agriculture, transport and energy supply account for around two thirds of the total.</li> <li>• Since the base year (1990), Northern Ireland's total greenhouse gas emissions have decreased by 20% from 24.3 to 19.4 million tonnes of carbon dioxide equivalent (MtCO2e).</li> <li>• In 2019, Northern Ireland's total greenhouse gas emissions accounted for 5% of the UK total, higher than its population share of 3%.</li> </ul>
<b>Cultural Heritage<sup>88</sup></b>	<ul style="list-style-type: none"> <li>• Northern Ireland has a rich heritage of archaeological sites, monuments and buildings representing the aspirations and achievements of past societies, providing evidence of settlement, agricultural, industrial and ritual activity from 9,000 years ago to the present day.</li> <li>• Northern Ireland's archaeological resource remains at risk from agricultural land use practices such as ploughing and tree planting and from development in urban areas.</li> <li>• Northern Ireland's built heritage has been affected by population growth and agricultural expansion since the 18th century.</li> <li>• The recorded numbers of scheduled monuments and listed buildings have increased since 2001/02 reflecting ongoing survey, designation and assessment.</li> <li>• There are upwards of 35,000 historic monuments and sites in Northern Ireland dating from 9,000 years ago to the recent past.</li> <li>• In 2020/21, there were a total of 2,012 scheduled historic monuments protected under Article 3 of the Historic Monuments and Archaeological Objects (NI) Order 1995.</li> <li>• Buildings that are classified as 'at risk' in Northern Ireland are recorded on the online Built Heritage at Risk in Northern Ireland (BHARNI) database.</li> <li>• In 2020/21, there were 762 listed buildings and structures on this database. An increase of 142 compared to 2019/20.</li> <li>• The Climate Change and Cultural Heritage project identified four main projected changes in our future climate which have the potential to impact on the historic environment: rising temperatures, reduced summer rainfall and higher summer temperatures, increased winter rainfall and more intense summer storms and sea level rises.</li> </ul>

<sup>85</sup> DAERA (2020). *Air Pollution in Northern Ireland 2020*.

<sup>86</sup> NIEA (2013). *A Second Assessment of the State of Northern Ireland's Environment*.

<sup>87</sup> DAERA (2022). *Northern Ireland Environmental Statistics Report*.

<sup>88</sup> DAERA (2022). *Northern Ireland Environmental Statistics Report*.

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SEA Theme	Baseline Summary <sup>79 80</sup>
<b>Landscape and Visual<sup>89 90</sup></b>	<ul style="list-style-type: none"> <li>• The Northern Ireland landscape is the result of human interventions and land use change dating back to the first recorded human settlement some 9,000 years ago.</li> <li>• The main pressures on the land in Northern Ireland are development (including housing, industrial and recreational), infrastructure, extraction industries, agriculture and forestry, and tourism.</li> <li>• The landscapes of Northern Ireland are renowned for their distinctiveness and are safeguarded with national and local planning policy and designations.</li> <li>• Northern Ireland land area of 14,150km<sup>2</sup> is only 6% of the UK and 12% of the island of Ireland but Northern Ireland has 130 distinct types of landscape.</li> <li>• Northern Ireland has eight Areas of Outstanding Natural Beauty (AONB) designated for their distinctive landscape character and high scenic value.</li> <li>• Seascapes are increasingly being recognised as being a key element of the coastal and marine environment.</li> </ul>

## 4.12 Key Sustainability Issues

Scoping identified the following key sustainability issues in relation to the eight environmental themes.

### 4.12.1 Key issues: Biodiversity

The EPA's 2020 report, *Ireland's Environment - An Integrated Assessment 2020*, notes that the main drivers and pressures on nature in Ireland include the rapid loss of biodiversity and changes to habitats in general at international level, with many habitats and species having less than favourable conservation status at EU level.

The following key biodiversity issues have been identified through the baseline review:

- There is a need to support the integrity of the national site network within Ireland.
- New strategic cycle infrastructure has the potential to lead to habitat loss, the disturbance of species and fragmentation of ecological networks.
- The nature, scale, timing, and duration of some activities could result in the disturbance of species at a level that may substantially affect their behaviour, and consequently affect the long-term viability of their populations. Any new strategic cycle infrastructure will need to consider the scale, timing and duration of its activities, to avoid disturbance to species along the routes.
- The development of a NCN also offers opportunities for enhancing linkages between habitats and delivering net gains for biodiversity.

### 4.12.2 Key issues: Population and Human Health

The following key population and human health issues have been identified through the baseline review:

<sup>89</sup> NIEA (2013). *A Second Assessment of the State of Northern Ireland's Environment*.

<sup>90</sup> DAERA (2022). *Landscape Character of Northern Ireland*

- Ireland is experiencing an increase in population, with an associated need for supporting infrastructure and services.
- An increase in population has led to a need for enhanced sustainable travel infrastructure provision, including that associated with active travel modes. In this respect new strategic cycle infrastructure will be a key contributor to improving such provision.
- There is an increasing need to enhance access for all to open spaces in Ireland, including through improving access to green / blue infrastructure.
- There is a need to facilitate enhancements to access to tourism facilities via active transport modes.
- Health and wellbeing are closely linked to activity levels. In this respect enhanced active travel provision provides significant opportunities for supporting healthier lifestyles.
- Road safety for cyclists is an issue in many locations. There is a need to enhance provision which is accessible for all ages and demographics.

#### 4.12.3 Key issues: Land and Soils

On average, Ireland's quality of soil is of excellent quality and the proportion of land estimated to be contaminated is quite low. There is no European legislation which focuses on soil and as a result there has been a continuous degradation of land and soils across Europe.

In Ireland, agriculture is the largest user of land in the country, with about 67% of total land cover. Agriculture, land-use change, and development are key pressures on land and soils.

The following key land, soils and geology issues identified through the baseline review include:

- The loss / damage of soil from the construction of greenfield sites for development, including new cycle infrastructure.
- Pressure on soil from land-use changes, including new cycle infrastructure.
- Disturbance of contaminated soils during the construction of new cycle infrastructure, could result in potential for water pollution and potential further land contamination.
- Possibility of soil sealing, covering of ground by an impermeable material. Soil sealing can potentially put biodiversity at risk, increase the risk of flooding and prevents natural drainage.
- Conversion of land / sites can release CO<sub>2</sub> into the atmosphere and further reduce areas of 'carbon sinks'.

- The need for the protection of sites of geological importance.

#### 4.12.4 Key issues: Water

Agriculture is the biggest contributor of pollutants to waterbodies, primarily from sources such as nutrient run-off and sediment and point pressures such as farmyards. After agriculture, pressures come from hydromorphological issues, urban wastewater discharges and forestry.

The following key water quality issues have been identified through the baseline review:

- Improvements to surface waterbodies are required to achieve 'good' ecological status of waterbodies by 2027. New development has the potential to negatively impact receiving waterbodies, through poor mitigation practices.
- Pressure on water resources also comes from land-use changes, intensification of agriculture, erosion, afforestation, industry and urbanisation.
- There is a need to effectively manage pluvial, fluvial, or groundwater flood risk.
- Hydromorphological modification (the second most common significant pressure on surface waterbodies) can cause increased siltation of riverbeds which impacts on ecological status.

#### 4.12.5 Key issues: Air Quality

Ireland generally has good air quality and generally meets its EU emissions limit values. Despite this, monitoring reveals that exceedances are occurring of the stricter WHO guideline values, an indication that air quality problems may be more widespread than previously thought.

The following key air quality issues have been identified through the baseline review:

- Emissions from transport are a key contributor to air quality issues. This includes those associated with private vehicle use.
- Particulate matter from the burning of solid fuel is estimated to cause 1,300 premature deaths per year in Ireland.
- The provision of sustainable transport infrastructure, including new cycle infrastructure will support enhancements to air quality.

#### 4.12.6 Key issues: Climate Change

In regard to GHG emissions, Ireland has one of the highest per capita emissions in the EU. A report from the EPA in June 2021 estimates that Ireland has exceeded its compliance obligations over the 2013-2020 period. To achieve compliance, Ireland will need to either use credits and/ or purchase surplus annual emission allocations from other member states.



The actions necessary for Ireland to deliver on its 2030 climate targets are listed in the Climate Action Plan 2021.

The following key issues related to climate change have been identified through the baseline review:

- Transportation is a key contributor to greenhouse gas emissions in Ireland.
- Modal shift from the private car to sustainable transport modes (including active travel) will be a key means of reducing Ireland's carbon emissions and reaching the Government's goal of an 80% reduction in carbon emissions by 2050.
- Climate change has the potential to increase the severity of heavy rainfall events and lead to more frequent and damaging storms. Wetter winters and an increase in extreme weather events have the potential to increase the number of flood events and their severity.
- There is a need to increase the resilience of the transport network in response to the likely effects of climate change.

#### **4.12.7 Key issues: Cultural Heritage**

The following key cultural heritage issues have been identified through the baseline review:

- Many rural areas have a rich historic environment resource, comprising designated and undesignated features, areas of distinctive historic landscape character, and locations with a rich archaeological resource.
- Many of these features and areas of heritage interest are under a range of pressures.
- New infrastructure provision has the potential to impact on the fabric and setting of heritage assets, through ground disturbance, and inappropriate design and layout.
- Accessibility via active travel modes to cultural sites is a key challenge which is closely linked to the sustainability of the visitor and tourism economy, and enhanced awareness and understanding of the historic environment.
- The transport network should avoid loss of or damage to heritage features and where possible recognise and better reveal the significance of heritage assets into transport infrastructure, providing opportunities for enhancing their fabric and setting.
- There is a need to increase public awareness of the cultural value and social significance of Ireland's built heritage. New strategic cycle infrastructure has the potential to connect people to the historic environment.

#### 4.12.8 Key issues: Landscape and Visual

The following key landscape and visual issues have been identified through the baseline review:

- The landscape character of Ireland is rich and varied, with a diversity of lowland and upland, river, lake and shore character areas.
- Many biodiversity habitats comprise important features for landscape.
- Transportation is identified as a key force of change for landscape character. Additional forces of change which have the potential to be directly and indirectly influenced by transport related issues include (but are not limited to): climate change, biodiversity habitats and field systems, tranquillity, built development, and tourism.
- Goals of production of a national Landscape Character Assessment (LCA) at local and intra-local level have made little progress. The lack of a national and regional level landscape character assessment and guidelines has led to inconsistent and fragmented approach to assessments across local authorities.
- Landscape and seascape character in coastal areas are experiencing additional pressures from tourism and development.
- Enhanced active travel networks have the potential to support the enjoyment and understanding of Ireland's diverse landscapes.

## 5. Strategic Environmental Objectives

### 5.1 SEA Framework of Objectives and Assessment Questions

Presented below under each of the SEA themes is the SEA framework of objectives (Strategic Environmental Objectives (SEOs)) and assessment questions which forms the methodological structure for assessing the NCN Plan and reasonable alternatives.

The framework's objectives and assessment questions are reflective of the extent of the assessment criteria listed in the SEA Directive, wider environmental protection objectives at a national, European and international level and the baseline information presented in Section 4 and 5. The information was refined following consultation on the Scoping Report.

**Table 5.1: SEA Framework for the NCN Plan**

SEA Theme	SEOs	Assessment Questions – will the option / proposal help to:
<b>Biodiversity</b>	Preserve, protect, maintain and where appropriate restore the integrity of any European site, regarding its qualifying interests, associated conservation status, structure and function. Enhance biodiversity in line with the National Biodiversity Strategy and its targets.	<ul style="list-style-type: none"> <li>• Protect the integrity of designated biodiversity sites?</li> <li>• Avoid negative impacts, and where possible improve biodiversity?</li> <li>• Protect and enhance semi-natural habitats?</li> <li>• Increase the resilience of biodiversity to the potential effects of climate change?</li> </ul>
<b>Population and Human Health</b>	Protect human health and well-being from environment-related pressures.	<ul style="list-style-type: none"> <li>• Encourage modal shift to more sustainable forms of travel?</li> <li>• Support accessibility to key services and facilities?</li> <li>• Reduce the impacts of air pollution on health?</li> <li>• Promote the use and benefits of healthier modes of travel?</li> <li>• Enhance the provision of, and access to, tourist destinations in the country?</li> </ul>
<b>Land, Soils and Geology</b>	Safeguard soil quality and sensitive soils and geological heritage sites against pollution and degradation.	<ul style="list-style-type: none"> <li>• Protect soil degradation and loss?</li> <li>• Enhance awareness and understanding of geological heritage sites?</li> </ul>
<b>Water</b>	Protect, restore and where necessary improve and maintain water quality (surface waters and groundwaters) to meet the objectives of the Water Framework Directive.	<ul style="list-style-type: none"> <li>• Support improvements to water quality, including through minimising the impacts of diffuse run off?</li> <li>• Protect surface water and groundwater resources?</li> <li>• Minimising any hydromorphological impacts?</li> </ul>

<b>SEA Theme</b>	<b>SEOs</b>	<b>Assessment Questions – will the option / proposal help to:</b>
<b>Air Quality</b>	Prevent, avoid or reduce harmful effects on human health and the environment resulting from emissions to air.	<ul style="list-style-type: none"> <li>• Reduce emissions from transport?</li> <li>• Contribute to improvements in air quality?</li> <li>• Encourage a shift to more sustainable modes of transport?</li> <li>• Improve access to active travel networks?</li> </ul>
<b>Climate Change</b>	Contribute towards the reduction of greenhouse gas emissions in line with national targets.	<ul style="list-style-type: none"> <li>• Limit the increase in the carbon footprint resulting from new transport infrastructure provision?</li> <li>• Seek to significantly reduce the emissions from existing transport infrastructure?</li> <li>• Promote the use of sustainable modes of transport, including walking and cycling?</li> <li>• Increase the resilience of the transport network to the potential effects of climate change?</li> <li>• Improve and extend green infrastructure networks as part of transport infrastructure provision to support adaptation to the potential effects of climate change?</li> <li>• Sustainably manage water run-off, reducing surface water runoff?</li> <li>• Ensure the potential risks associated with climate change are considered through new transport network programmes?</li> <li>• Reduce the impact of extreme weather events on the condition of the transport network?</li> </ul>
<b>Cultural Heritage</b>	Protect places, features, buildings and landscapes of cultural, historical or archaeological or architectural heritage.	<ul style="list-style-type: none"> <li>• Conserve and enhance the significance of buildings and structures of architectural or historic interest, both designated and non-designated, and their setting?</li> <li>• Conserve and enhance conservation areas and their settings?</li> <li>• Conserve and enhance archaeological remains and support the undertaking of archaeological investigations and, where appropriate, recommend mitigation strategies?</li> </ul>
<b>Landscape and Visual</b>	Protect landscape character and visual amenity.	<ul style="list-style-type: none"> <li>• Support the landscape management objectives of county development plans?</li> <li>• Conserve and enhance locally important landscape and townscape features?</li> </ul>

## 6. Assessment of Reasonable Alternatives for the NCN Plan

### 6.1 Reasonable Alternatives

Article 5 of the SEA Directive requires the consideration of reasonable alternatives, taking into account the objectives and the geographical scope of the plan or programme and the significant environmental effects of the alternatives proposed. Consideration and evaluation of the likely environmental consequences of alternative plan approaches is an important aspect of the SEA process.

The SEA Regulations are not prescriptive about what constitutes a reasonable alternative, stating only that the Environmental Report should “...*identify, describe and evaluate the likely significant effects on the environment of implementing the plan or programme...and reasonable alternatives taking account of the objectives and the geographical scope of the plan or programme.*”

To meet these requirements, the SEA process has considered alternative options for the potential route corridors to be taken forward through the NCN.

### 6.2 Overview of Corridor Options Considered as Reasonable Alternatives

The NCN will guide the development of cycle infrastructure in Ireland over the coming years. In setting out a proposed national cycle network, the current phase of the development of the NCN focusses on the establishment of broad corridors approximately 4km wide through which interventions should subsequently be targeted.

In light of this, the current stage of development of the NCN Plan identifies a number of proposed corridors which it is intended will form the NCN.

In identifying these corridors, a range of options were considered as potential corridors. The corridor options (totalling in the region of 90 options) have regard to the NCN objectives and feasible connections between two nodes (defined destinations). Specifically, the options were assessed based on estimated demand, safety, integration with existing and planned cycle infrastructure, social inclusion, and connectivity to smaller settlements, transport modes and tourist attractions.

To support the consideration of these corridor options, the options have been assessed through the SEA process as reasonable alternatives. The purpose of this exercise is to identify, at a high level, the likely environmental constraints and considerations that would need to be taken into account if a potential corridor was subsequently taken forward as part of the NCN.

The locations of the corridor options considered<sup>91</sup> are presented in the maps included in **Appendix B**.

## 6.3 Approach to the Appraisal of Corridor Options

The assessment identifies and evaluates the likely significant effects of each potential corridor on the baseline, using the SEA Framework developed through scoping as a methodological framework (**Section 5.1**). Findings have been presented through the eight environmental themes developed during scoping:

1. Biodiversity (including Flora & Fauna).
2. Population and Human Health.
3. Land, Soils and Geology.
4. Water Quality.
5. Air Quality.
6. Climate Change (which includes mitigation and adaptation).
7. Cultural Heritage (including architecture and archaeology).
8. Landscape.

Under each of the above environmental themes, assessment findings have been discussed for each corridor option.

### 6.3.1 Limitations of Assessment

It is important to acknowledge the limitations of the approach undertaken for the assessment. These limitations relate to both the scope and coverage of the corridor options and the nature of the SEA process.

The following considerations apply to the assessment:

- **High level nature of corridor options:** The corridor options are not designed to set out detailed routes for cycle infrastructure. They are instead intended to identify broad corridors through which interventions should subsequently be targeted. In this respect the assessment focusses on the key environmental constraints which may affect each corridor option, without going into significant detail of likely impacts. This approach reflects the high-level nature of the corridors being proposed.
- **Subsequent scheme definition and design:** Likely scheme definition and the subsequent scheme design activities can lead to uncertainties as to the resultant impact. In such situations it is recognised that potential impacts identified in the SEA may be avoided or mitigated during subsequent scheme design activities.

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<sup>91</sup> It should be noted that for some locations there were no reasonable corridor options to consider, whilst for a number of corridors there were two or three potential options to consider. In this respect all options have been considered.

- **Embedded mitigation:** Linked to the above, potential impacts on environmental receptors may be reduced with the application of embedded mitigation required by national legislative and regulatory provisions during the design phase. With the incorporation of embedded mitigation measures there would likely be opportunities to reduce any potential significant negative impacts that may arise. In this respect the assessments of the corridor options do not seek to apply embedded mitigation which is likely to be required.

Where appropriate, the SEA will acknowledge these limitations throughout the process.

## 6.4 Appraisal Findings

Appraisal findings relating to the corridor options are presented in **Appendix B**. This presents the full assessment tables for the appraisal of the corridor options, presenting the key environmental constraints and considerations that should be considered for each option.

A summary of the appraisal findings, and rankings of the options' performance against each SEA theme, is presented in **Table 6.1**.

The scoring used is represented in the key below. Where two or more options have been proposed for a corridor, a ranking of the relative sustainability merits has also been provided, with '1' as the option deemed to be most favourable in relation to the SEA theme.

Key	Description
Negative Impact	Indicates a potential negative environmental impact
Positive Impact	Indicates a potential positive environmental impact
Uncertain Impact	Indicates that in the absence of further information the impact is unclear
Neutral Impact	Indicates a potential neutral or no significant environmental impact
Options Appraisal 1, 2, 3 or = *(used for corridors with options only)	Where an option is present (i.e. A, B, C), 1 is the first preference, 2 is the second preference and 3 is the third preference (where a third preference is present). Where no difference between options occurs '=' (equals) is used.

**Table 6.1: Summary of Appraisal Findings: Corridor Options**

Corridor	SEA Theme																	
	Biodiversity		Population & Health		Land & Soils		Water		Air Quality		Climate Change		Cultural Heritage		Landscape			
Corridor 1 Buncrana to Letterkenny / Derry																		
Corridor 2 Derry to Letterkenny																		
Corridor 3 Derry to Strabane (Options 3A & 3B)	2	1	1	2	=	=	=	=	=	=	=	=	=	=	=	=	=	=
Corridor 4 Letterkenny to Strabane (Options 4A & 4B)	1	2	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=
Corridor 5 Letterkenny to Sligo																		
Corridor 6 Sligo to Enniskillen																		
Corridor 7 Enniskillen to Cavan																		
Corridor 8 Longford to Sligo (Options 8A & 8B)	=	=	1	2	1	2	=	=	=	=	1	2	=	=	=	=	=	=
Corridor 9 Sligo to Ballina (Options 9A & 9B)	1	2	2	1	2	1	=	=	=	=	2	1	2	1	=	=	=	=
Corridor 10 Ballina to Castlebar (Options 10A & 10B & 10C)	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=
Corridor 11 Westport to Castlebar																		
Corridor 12 Galway to Castlebar (Options 12A & 12B)	1	2	1	2	2	1	=	=	=	=	1	2	2	1	=	=	=	=
Corridor 13 Castlebar to Longford (Options 13A & 13B)	=	=	2	1	=	=	=	=	=	=	2	1	=	=	=	=	=	=
Corridor 14 Roscommon to Longford (Options 14A & 14B)	=	=	1	2	=	=	=	=	=	=	=	=	=	=	=	=	=	=
Corridor 15 Roscommon to Athlone (Options 15A & 15B)	1	2	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=
Corridor 16 Athlone to Longford (Options 16A & 16B)	=	=	=	=	1	2	=	=	=	=	=	=	1	2	=	=	=	=
Corridor 17 Longford to Mullingar																		



Corridor	SEA Theme															
	Biodiversity		Population & Health		Land & Soils		Water		Air Quality		Climate Change		Cultural Heritage		Landscape	
Corridor 18 Athlone to Mullingar																
Corridor 19 Athlone to Tullamore (Options 19A & 19B)	=	=	=	=	1	2	=	=	=	=	=	=	1	2	=	=
Corridor 20 Limerick to Portlaoise (Options 20A & 20B)	=	=	1	2	=	=	=	=	=	=	1	2	=	=	=	=
Corridor 21 Limerick to Athlone																
Corridor 22 Galway to Athlone																
Corridor 23 Galway to Ennis																
Corridor 24 Ennis to Limerick																
Corridor 25 Shannon to Ennis/Limerick																
Corridor 26 Tralee to Limerick (Options 26A & 26B)	=	=	=	=	=	=	=	=	=	=	=	=	2	1	=	=
Corridor 27 Newcastle West to Tralee / Limerick																
Corridor 28 Cork to Tralee (Options 28A & 28B)	2	1	=	=	2	1	=	=	=	=	=	=	2	1	=	=
Corridor 29 Cork to Bandon																
Corridor 30 Cork to Kinsale																
Corridor 31 Cork to Cork Airport																
Corridor 32 Cork Airport to Carrigaline																
Corridor 33 Port of Cork to Carrigaline (Options 33A & 33B)	=	=	=	=	2	1	=	=	=	=	=	=	2	1	=	=
Corridor 34 Cork to Port of Cork																
Corridor 35 Cobh to Middleton																
Corridor 36 Cork to Cobh																
Corridor 37 Cork to Waterford (Options 37A & 37B)	=	=	2	1	=	=	=	=	=	=	2	1	=	=	=	=
Corridor 38 Cork to Fermoy (Options 38A & 38B)	=	=	2	1	=	=	=	=	=	=	=	=	=	=	=	=

Corridor	SEA Theme																							
	Biodiversity			Population & Health			Land & Soils			Water		Air Quality			Climate Change			Cultural Heritage		Landscape				
Corridor 39 Cork to Limerick (Options 39A & 39B)	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	1	2	=	=			
Corridor 40 Limerick to Waterford (Options 40A & 40B)	=	=	=	1	2	=	=	=	=	=	=	=	=	=	=	=	=	1	2	=	=			
Corridor 41 Limerick to Kilkenny																								
Corridor 42 Kilkenny to Portlaoise																								
Corridor 43 Kilkenny to Carlow																								
Corridor 44 Kilkenny to Enniscorthy																								
Corridor 45 Kilkenny to Waterford (Options 45A & 45B)	1	2	=	2	1	=	=	=	=	=	=	=	1	2	=	2	1	=	=	=	=			
Corridor 46 Waterford to Tramore																								
Corridor 47 Enniscorthy to Waterford (Options 47A & 47B)	1	2	=	=	=	=	=	=	=	=	=	=	=	=	=	2	1	=	=	=	=			
Corridor 48 Waterford to Wexford																								
Corridor 49 Wexford to Rosslare Europort																								
Corridor 50 Enniscorthy to Wexford (Options 50A & 50B & 50C)	=	=	=	2	2	1	=	=	2	=	=	=	=	=	=	2	2	1	=	=	=	=	=	=
Corridor 51 Enniscorthy to Wicklow (Options 51A & 51B)	1	2	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=			
Corridor 52 Wicklow to Bray (Options 52A & 52B & 52C)	2	3	1	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	1	=	=	=		
Corridor 53 Bray to Dublin (Options 53A & 53B)	1	2	=	2	1	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=			
Corridor 54 Carlow to Arklow																								
Corridor 55 Carlow to Portlaoise (Options 55A & 55B)	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=			
Corridor 56 Tullamore to Portlaoise (Options 56A & 56B)	=	=	=	=	=	=	2	1	=	=	=	=	=	=	=	2	1	=	=	=	=			

Corridor	SEA Theme															
	Biodiversity		Population & Health		Land & Soils		Water		Air Quality		Climate Change		Cultural Heritage		Landscape	
Corridor 57 Mullingar to Tullamore (Options 57A & 57B)	1	2	=	=	2	1	=	=	=	=	=	=	2	1	=	=
Corridor 58 Edenderry to Portlaoise																
Corridor 59 Newbridge to Naas (Options 59A & 59B)	=	=	1	2	2	1	=	=	=	=	1	2	2	1	=	=
Corridor 60 Portlaoise to Newbridge (Options 60A & 60B)	=	=	1	2	2	1	=	=	=	=	1	2	2	1	=	=
Corridor 61 Nass to Blessington																
Corridor 62 Naas to Sallins																
Corridor 63 Edenderry to Naas																
Corridor 64 Mullingar to Edenderry (Options 64A & 64B)	=	=	=	=	=	=	=	=	=	=	=	=	2	1	=	=
Corridor 65 Mullingar to Maynooth																
Corridor 66 Navan to Mullingar (Options 66A & 66B)	=	=	=	=	=	=	=	=	=	=	=	=	2	1	=	=
Corridor 67 Dunboyne to Maynooth																
Corridor 68 Dunboyne to Leixlip																
Corridor 69 Maynooth to Leixlip																
Corridor 70 Maynooth to Celbridge																
Corridor 71 Leixlip to Celbridge																
Corridor 72 Dublin to Leixlip																
Corridor 73 Naas to Dublin (Options 73A & 73B)	=	=	=	=	=	=	=	=	=	=	=	=	1	2	=	=
Corridor 74 Celbridge to Dublin (Options 74A & 74B)	=	=	1	2	1	2	=	=	=	=	=	=	1	2	=	=
Corridor 75 Grand Canal Greenway																
Corridor 76 Dublin Port to Heuston Station via Connolly Station																

Corridor	SEA Theme																							
	Biodiversity			Population & Health			Land & Soils			Water			Air Quality			Climate Change			Cultural Heritage			Landscape		
Corridor 77 Swords to Dublin (Options 77A & 77B & 77C)	=	=	2	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=
Corridor 78 Swords to Malahide																								
Corridor 79 Navan to Swords (Options 79A & 79B)	=	=		1	2		=	=		=	=		=	=		1	2		=	=		=	=	
Corridor 80 Balbriggan to Swords (Options 80A & 80B)	1	2		2	1		1	2		=	=		=	=		2	1		=	=		=	=	
Corridor 81 Drogheda to Balbriggan (Options 81A & 81B)	1	2		2	1		1	2		=	=		=	=		2	1		=	=		=	=	
Corridor 82 Navan to Drogheda (Options 82A & 82B & 82C)	3	1	2	1	2	3	=	=	=	=	=	=	=	=	=	1	2	3	=	=	=	=	=	=
Corridor 83 Dundalk to Drogheda (Options 83A & 83B & 83C)	2	1	3	2	3	1	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=
Corridor 84 Cavan to Navan (Options 84A & 84B)	=	=		1	2		=	=		=	=		=	=		=	=		=	=		=	=	
Corridor 85 Longford to Cavan (Options 85A & 85B & 85C)	=	=	=	=	=	1	=	=	=	=	=	=	=	=	=	=	=	1	2	=	=	=	=	=
Corridor 86 Armagh to Cavan																								
Corridor 87 Dundalk to Monaghan																								
Corridor 88 Dundalk to Armagh																								
Corridor 89 Dundalk to Carrickmacross																								
Corridor 90 Newry to Dundalk (Options 90A & 90B)	1	2		2	1		2	1		=	=		=	=		2	1		2	1		=	=	

## 6.5 Preferred Approach for the NCN Plan

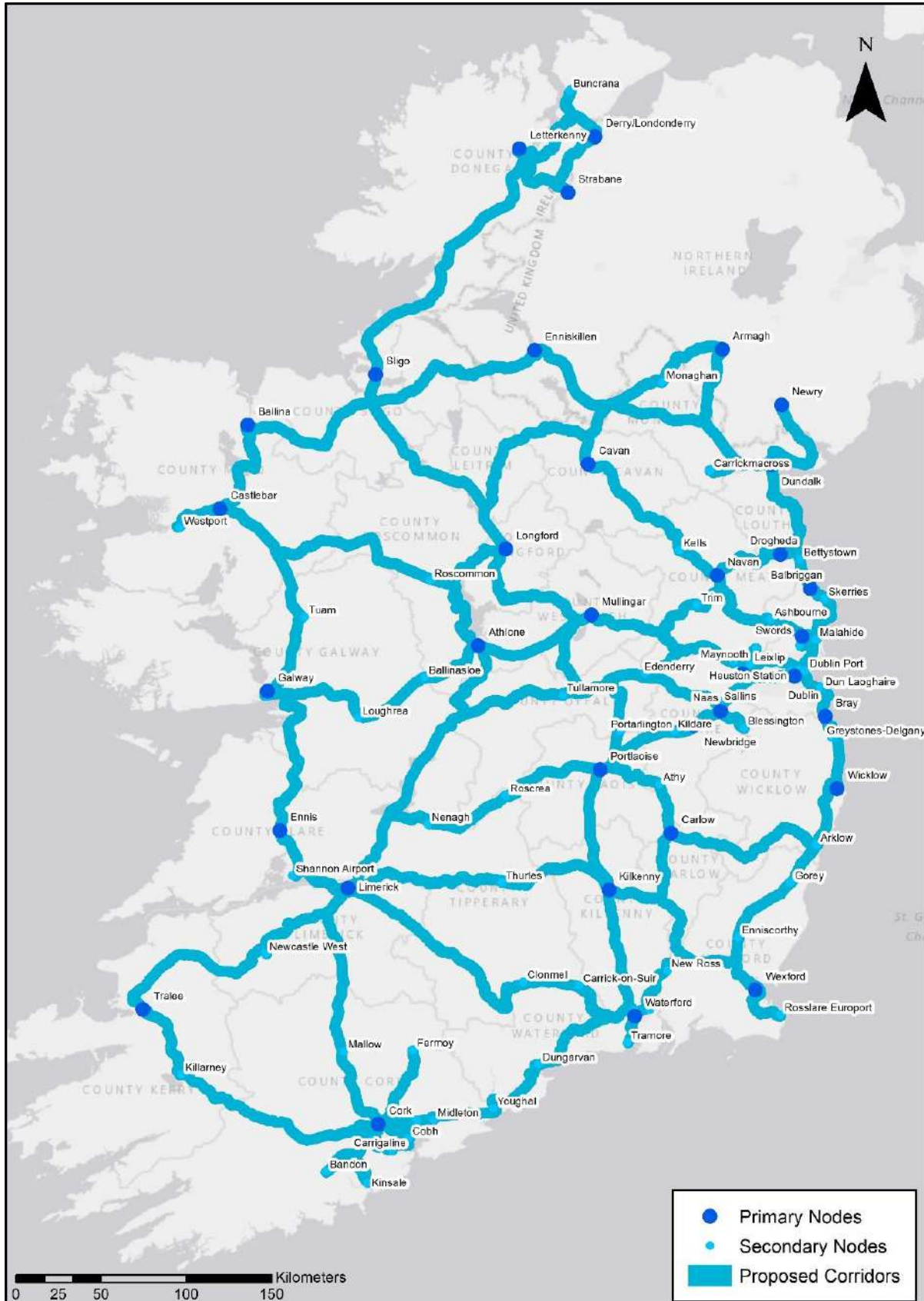
Following the consideration of corridor options, and following public consultation of the Plan, the corridors highlighted in **Figure 6.1** have been selected as the key components of the preferred NCN.

These corridors are as follows:

Corridor Name (Corridor No. following updates to Plan)	Corridor Number (as assessed in Table 6.1)	Corridor Option	Corridor Name (Corridor No. following updates to Plan)	Corridor Number (as assessed in Table 6.1)	Corridor Option
Buncrana to Letterkenny / Derry (1)	1		Kilkenny to Waterford (44)	45	A
Derry to Letterkenny (2)	2		Waterford to Tramore (45)	46	
Derry to Strabane (3)	3	B	Enniscorthy to Waterford (46)	47	B
Letterkenny to Strabane (4)	4	A	Waterford to Wexford (47)	48	
Letterkenny to Sligo (5)	5		Wexford to Rosslare Europort (48)	49	
Sligo to Enniskillen (6)	6		Enniscorthy to Wicklow (49)	51	A
Enniskillen to Cavan (7)	7		Wicklow to Bray (50)	52	B
Longford to Sligo (8)	8	A	Bray to Dublin (51)	53	B
Sligo to Ballina (9)	9	B	Carlow to Arklow (52)	54	
Ballina to Castlebar (10)	10	A	Carlow to Portlaoise (53)	55	A
Westport to Castlebar (11)	11		Tullamore to Portlaoise (54)	56	B
Galway to Castlebar (12)	12	B	Mullingar to Tullamore (55)	57	B
Castlebar to Longford (13)	13	B	Edenderry to Portlaoise (56)	58	
Roscommon to Athlone (14)	15	B	Newbridge to Naas (57)	59	B
Athlone to Longford (15)	16	B	Portlaoise to Newbridge (58)	60	A
Longford to Mullingar (16)	17		Naas to Blessington (59)	61	
Athlone to Mullingar (17)	18		Edenderry to Naas (60)	63	
Athlone to Tullamore (18)	19	A	Mullingar to Edenderry (61)	64	B
Limerick to Portlaoise (19)	20	A	Mullingar to Maynooth (62)	65	
Limerick to Athlone (20)	21		Navan to Mullingar (63)	66	B
Galway to Athlone (21)	22		Dunboyne to Leixlip (64)	68	
Galway to Ennis (22)	23		Maynooth to Leixlip (65)	69	
Ennis to Limerick (23)	24		Leixlip to Celbridge (66)	71	
Shannon to Ennis/Limerick (24)	25		Dublin to Leixlip (67)	72	
Tralee to Limerick (25)	26	B	Naas to Dublin (68)	73	A

Corridor Name (Corridor No. following updates to Plan)	Corridor Number (as assessed in Table 6.1)	Corridor Option	Corridor Name (Corridor No. following updates to Plan)	Corridor Number (as assessed in Table 6.1)	Corridor Option
Newcastle W. to Tralee/Limerick (26)	27		Swords to Dublin airport (69)		
Cork to Tralee (27)	28	B	Celbridge to Dublin (70)	74	A
Cork to Bandon (28)	29		Grand Canal Greenway (71)	75	
Cork to Kinsale (29)	30		Dublin port to Heuston Station via Connolly station (72)	76	
Cork to Cork airport (30)	31		Swords to Dublin (73)	77	B
Cork airport to Carrigaline (31)	32		Navan to Swords (74)	79	A
Port of Cork to Carrigaline (32)	33	B	Balbriggan to Swords (75)	80	B
Cork to Port of Cork (33)	34		Drogheda to Balbriggan (76)	81	B
Cobh to Middleton (34)	35		Navan to Drogheda (77)	82	A
Cork to Cobh (35)	36		Dundalk to Drogheda (78)	83	C
Cork to Waterford (36)	37	B	Cavan to Navan (79)	84	A
Cork to Fermoy (37)	38	B	Longford to Cavan (80)	85	C
Cork to Limerick (38)	39	A	Armagh to Cavan (81)	86	
Limerick to Waterford (39)	40	A	Dundalk to Monaghan (82)	87	
Limerick to Kilkenny (40)	41		Dundalk to Armagh (83)	88	
Kilkenny to Portlaoise (41)	42		Dundalk to Carrickmacross (84)	89	
Kilkenny to Carlow (42)	43		Newry to Dundalk (85)	90	B
Kilkenny to Enniscorthy (43)	44				

Figure 6.1: Preferred Corridors for the NCN Plan, after Consultation



## 7. Assessment of the NCN Plan

### 7.1 Assessment of Preferred Corridor Options

Drawing on the assessments presented in **Chapter 6**, and **Appendix B**, a summary of the appraisal findings relating to the preferred corridor options (and following public consultation) is presented in **Table 7.1**.

More detailed findings relating to the corridors can be accessed in **Appendix B**.

The scorings used is represented in the key below.

Key	Description
Negative Impact	Indicates a potential negative environmental impact
Positive Impact	Indicates a potential positive environmental impact
Uncertain Impact	Indicates that in the absence of further information the impact is unclear
Neutral Impact	Indicates a potential neutral or no significant environmental impact



**Table 7.1: Summary of Appraisal Findings: Preferred NCN Corridor Options**

Corridor No. (as assessed in Section 6) and Name	Updated Corridor No. <sup>92</sup>	SEA Theme							
		Biodiversity	Population & Health	Land & Soils	Water	Air Quality	Climate Change	Cultural Heritage	Landscape
Corridor 1 Buncrana to Letterkenny / Derry	1								
Corridor 2 Derry to Letterkenny	2								
Corridor 3 Derry to Strabane (Option 3B)	3								
Corridor 4 Letterkenny to Strabane (Option 4A)	4								
Corridor 5 Letterkenny to Sligo	5								
Corridor 6 Sligo to Enniskillen	6								
Corridor 7 Enniskillen to Cavan	7								
Corridor 8 Longford to Sligo (Option 8A)	8								
Corridor 9 Sligo to Ballina (Option 9B)	9								
Corridor 10 Ballina to Castlebar (Option 10A)	10								
Corridor 11 Westport to Castlebar	11								
Corridor 12 Galway to Castlebar (Option 12B)	12								
Corridor 13 Castlebar to Longford (Option 13B)	13								
Corridor 15 Roscommon to Athlone (Option 15B)	14								
Corridor 16 Athlone to Longford (Option 16B)	15								
Corridor 17 Longford to Mullingar	16								
Corridor 18 Athlone to Mullingar	17								
Corridor 19 Athlone to Tullamore (Option 19A)	18								
Corridor 20 Limerick to Portlaoise (Option 20A)	19								

<sup>92</sup> Following updates to the Plan.

Corridor No. (as assessed in Section 6) and Name	Updated Corridor No. <sup>92</sup>	SEA Theme							
		Biodiversity	Population & Health	Land & Soils	Water	Air Quality	Climate Change	Cultural Heritage	Landscape
Corridor 21 Limerick to Athlone	20								
Corridor 22 Galway to Athlone	21								
Corridor 23 Galway to Ennis	22								
Corridor 24 Ennis to Limerick	23								
Corridor 25 Shannon to Ennis/Limerick	24								
Corridor 26 Tralee to Limerick (Option 26B)	25								
Corridor 27 Newcastle West to Tralee / Limerick	26								
Corridor 28 Cork to Tralee (Option 28B)	27								
Corridor 29 Cork to Bandon	28								
Corridor 30 Cork to Kinsale	29								
Corridor 31 Cork to Cork Airport	30								
Corridor 32 Cork Airport to Carrigaline	31								
Corridor 33 Port of Cork to Carrigaline (Option 33B)	32								
Corridor 34 Cork to Port of Cork	33								
Corridor 35 Cobh to Midleton	34								
Corridor 36 Cork to Cobh	35								
Corridor 37 Cork to Waterford (Option 37B)	36								
Corridor 38 Cork to Fermoy (Option 38B)	37								
Corridor 39 Cork to Limerick (Option 39A)	38								
Corridor 40 Limerick to Waterford (Option 40A)	39								
Corridor 41 Limerick to Kilkenny	40								
Corridor 42 Kilkenny to Portlaoise	41								

Corridor No. (as assessed in Section 6) and Name	Updated Corridor No. <sup>92</sup>	SEA Theme							
		Biodiversity	Population & Health	Land & Soils	Water	Air Quality	Climate Change	Cultural Heritage	Landscape
Corridor 43 Kilkenny to Carlow	42								
Corridor 44 Kilkenny to Enniscorthy	43								
Corridor 45 Kilkenny to Waterford (Option 45A)	44								
Corridor 46 Waterford to Tramore	45								
Corridor 47 Enniscorthy to Waterford (Option 47B)	46								
Corridor 48 Waterford to Wexford	47								
Corridor 49 Wexford to Rosslare Europort	48								
Corridor 51 Enniscorthy to Wicklow (Option 51A)	49								
Corridor 52 Wicklow to Bray (Option 52B)	50								
Corridor 53 Bray to Dublin (Option 53B)	51								
Corridor 54 Carlow to Arklow	52								
Corridor 55 Carlow to Portlaoise (Option 55A)	53								
Corridor 56 Tullamore to Portlaoise (Option 56B)	54								
Corridor 57 Mullingar to Tullamore (Option 57B)	55								
Corridor 58 Edenderry to Portlaoise	56								
Corridor 59 Newbridge to Naas (Option 59B)	57								
Corridor 60 Portlaoise to Newbridge (Option 60A)	58								
Corridor 61 Nass to Blessington	59								
Corridor 63 Edenderry to Naas	60								
Corridor 64 Mullingar to Edenderry (Option 64B)	61								
Corridor 65 Mullingar to Maynooth	62								
Corridor 66 Navan to Mullingar (Option 66B)	63								

Corridor No. (as assessed in Section 6) and Name	Updated Corridor No. <sup>92</sup>	SEA Theme							
		Biodiversity	Population & Health	Land & Soils	Water	Air Quality	Climate Change	Cultural Heritage	Landscape
Corridor 68 Dunboyne to Leixlip	64								
Corridor 69 Maynooth to Leixlip	65								
Corridor 71 Leixlip to Celbridge	66								
Corridor 72 Dublin to Leixlip	67								
Corridor 73 Naas to Dublin (Option 73A)	68								
Swords to Dublin Airport	69								
Corridor 74 Celbridge to Dublin (Option 74A)	70								
Corridor 75 Grand Canal Greenway	71								
Corridor 76 Dublin Port to Heuston Station via Connolly Station	72								
Corridor 77 Swords to Dublin (Option 77B)	73								
Corridor 79 Navan to Swords (Option 79A)	74								
Corridor 80 Balbriggan to Swords (Option 80B)	75								
Corridor 81 Drogheda to Balbriggan (Option 81B)	76								
Corridor 82 Navan to Drogheda (Option 82A)	77								
Corridor 83 Dundalk to Drogheda (Option 83C)	78								
Corridor 84 Cavan to Navan (Option 84A)	79								
Corridor 85 Longford to Cavan (Option 85C)	80								
Corridor 86 Armagh to Cavan	81								
Corridor 87 Dundalk to Monaghan	82								
Corridor 88 Dundalk to Armagh	83								
Corridor 89 Dundalk to Carrickmacross	84								

Corridor No. (as assessed in Section 6) and Name	Updated Corridor No. <sup>92</sup>	SEA Theme							
		Biodiversity	Population & Health	Land & Soils	Water	Air Quality	Climate Change	Cultural Heritage	Landscape
Corridor 90 Newry to Dundalk (Option 90B)	85								

## 7.2 Cumulative Impacts

Cumulative effects occur from the combined impacts of policies and proposals on specific areas or sensitive receptors.

In the context of SEA, cumulative effects can result from the combined impacts of a plan with impacts of another plan, or the 'inter-plan' effects. These can affect the same receptor, resulting in in-combination or synergistic effects. The combination of NCN proposals and other proposals and activities has the potential to lead to cumulative effects. Examples include:

- National, county and city development plans.
- Development of tourism infrastructure.
- Development of national and local transport plans and strategies across Ireland.
- Upgrades to the National Road Network across Ireland.
- Proposals to increase/manage visitor numbers across Ireland and development of tourism infrastructure.
- Activities designed to enhance national, regional and sub-regional green infrastructure networks.
- Reinstatement and/or restoration of railway lines across Ireland.
- Other infrastructure development, such as minerals proposals.

Potential effects (both positive and negative) which may occur as a result of the in-combination effects of the NCN Plan and other plans and proposals include:

- Enhancements to sub-regional green infrastructure networks.
- Improvements in accessibility resulting from the combined effects of enhancements to public transport, walking and cycling networks and public realm enhancements.
- Enhancements in active travel opportunities.
- Cumulative impacts on ecological networks. This is from combined negative effects of new development and associated infrastructure on habitats and biodiversity corridors. Enhancements to green infrastructure provision facilitated through plan proposals and other projects also have significant potential to support local, sub-regional regional and national ecological networks. This includes through embedding the principle of environmental net gain in scheme development.
- Impacts on flood risk from the in-combination effects of new development, including relating to surface water and fluvial flooding.

- Cumulative and synergistic positive impacts on health and wellbeing.
- Enhancements in sustainable tourism opportunities.

For many potential cumulative effects, the policy approaches proposed by the various plans and programmes will help reduce the significance of in-combination impacts. In this respect the NCN Plan will support numerous environmental benefits, and in many respects will help limit the impacts of proposals taken forward through other plans and programmes. However, monitoring for the plans and programmes will be a key means of ensuring that unforeseen adverse environmental and socio-economic effects are highlighted, and remedial action can be taken where adverse effects arise.

### 7.3 Mitigation Measures

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

Article 5 of the SEA Directive requires that mitigation measures are proposed for significant adverse effects identified on the environment as a result of the implementation of the plan or programme.

As discussed above under the 'limitations' discussion (**Section 6.3.1**), given the high-level nature of the corridors proposed for the NCN, it is not possible to propose specific mitigation measures for each corridor. It is also not possible to propose specific enhancement measures. Detailed mitigation and enhancement opportunities would instead be developed as part of the design and consenting process at the scheme level, and embedded mitigation measures will be required alongside scheme development. In addition, where appropriate, project level Environmental Impact Assessment and Appropriate Assessment would be undertaken for individual schemes where likely significant effects arise; these will also identify appropriate scheme-level mitigation measures.

However, the following examples of mitigation and enhancement measures can be considered during the development of schemes which implement the NCN Plan:

- The design, location and layout of new cycle infrastructure should be sensitive to (and reinforce) local landscape, townscape and villagescape character.
- The delivery of new cycle links should be sensitive to the fabric and setting of the historic environment and facilitate opportunities for its enhancement.
- Signage and waymarking of the NCN should be designed so as not to detract from local character, the setting of the historic environment or impact adversely on the quality of the public realm.

- Design, surfacing and street furniture should complement the setting of the historic environment and local distinctiveness.
- The development of off-line cycle infrastructure should appropriately recognise the possibility for archaeological remains to be found and seek to avoid impacts on significant remains which have been or are identified. Where found, remains should be archaeologically recorded in order to “preserve by record” the significant aspects of the route. This should be informed by an evaluation of the importance and significance of the archaeological resource.
- New cycle links should be delivered as key components of wider multifunctional green infrastructure networks which deliver multiple environmental and socio-economic benefits relating to, for example, health and wellbeing, landscape character, biodiversity, climate change adaptation, water quality and a range of others.
- Limitation of potential impacts on habitats and species from land take and loss of vegetation and trees.
- Avoidance of land take on designated biodiversity sites and sensitive habitats, and consideration of both direct and indirect effects on these sites.
- Enhancement of ecological networks alongside NCN infrastructure through appropriate planting and green infrastructure enhancements, and where possible, employing a premise of environmental net gain.
- Delivery of well-designed and appropriate lighting which seeks to limit impacts on light pollution and night blight, visual intrusion and ecological sensitivities.
- Provision of information for NCN users on local areas of interest, such as associated with the historic environment, cultural heritage, biodiversity assets and others.
- Facilitation of the use of recycled/reused materials to reduce the use of primary aggregates in construction and limit resource use.



## 8. Next Steps

### 8.1 Updates to the NCN Plan and Assessment of Changes

This Environmental Report has been published to accompany the draft NCN Plan for consultation. Following the consultation period, comments will be reviewed and analysed. The final NCN Plan will then be developed, with a view to adoption later in 2022. Any changes arising to the NCN Plan will need to be assessed as part of the SEA process.

### 8.2 SEA Adoption Statement

SEA Regulations 16.(2)(b) require that a 'statement' be made available to accompany the plan, as soon as possible after the adoption of the plan or programme. The purpose of the SEA Statement is to outline how the SEA process has influenced and informed the NCN Plan's development process and demonstrate how consultation on the SEA has been taken into account.

As the regulations outline, the SEA Statement should contain the following information:

- The reasons for choosing the preferred measures for the NCN Plan as adopted in the light of other reasonable alternatives dealt with;
- How environmental considerations have been integrated into the NCN Plan;
- How consultation responses have been taken into account; and
- Measures that are to be taken to monitor the significant environmental effects of the NCN Plan.

To meet these requirements, an SEA Statement will be published with the adopted version of the NCN Plan.

## **Appendix A: Summary of Scoping Submissions**

**Table 1: Summary of Scoping Submissions**

Environmental Authority	Summary of Submission	Response / Comment
<b>1. Department of Environment, Climate and Communications (DECC). (Environmental Protection and Circular Economy – Materials Management Divisions)</b>	<ul style="list-style-type: none"> <li>To include the Whole of Government Circular Economy Strategy 2022-2023 amongst the plans, policies referenced.</li> </ul>	<p>Strategy considered within the assessment. Specific comments are noted and addressed. Strategy has been considered and incorporated into the SEA Environmental Report as appropriate.</p>
<b>2. Geological Survey Ireland under DECC</b>	<ul style="list-style-type: none"> <li>GSI recommend using these various data sets, when conducting the EIAR, SEA, planning and scoping processes. Use of our data or maps should be attributed correctly to ‘Geological Survey Ireland’ (GSI).</li> <li>GSI would encourage use of and reference to our datasets.</li> <li>A list of our publicly available datasets that may be useful to the environmental assessment and planning process.</li> <li>GSI recommend that you review this list and refer to any datasets you consider relevant to your assessment.</li> </ul> <p><b>Geoheritage</b></p> <ul style="list-style-type: none"> <li>GSI welcome reference to our audited and unaudited geological heritage sites in Section 5.6.4.1 ‘Geological Heritage’, of the draft SEA Report.</li> <li>Important geological and geomorphological sites throughout the country for designation as geological NHAs (Natural Heritage Areas). Addressed by the Geoheritage Programme in GSI.</li> <li>Currently 27 local authority areas have completed geological heritage audits, and a further three are currently under way, (Limerick, Cork County and Cork City), creating an almost national level of audited sites. Completed audits for other counties and local authority areas can be viewed on the Map viewer.</li> </ul> <p><b>Culture and Tourism</b></p> <ul style="list-style-type: none"> <li>Geoparks have bolstered tourism in various parts of Ireland and helped to increase its levels in areas that were previously not as popular with tourists. We would encourage TII to develop the promotion of the geological value of sites close to cycle infrastructure.</li> </ul> <p><b>Groundwater</b></p> <ul style="list-style-type: none"> <li>GSI has completed Groundwater Protection Schemes (GWPSs) in partnership with Local Authorities, and there is now national coverage of GWPS mapping. GSI recommend using the groundwater maps on the Map viewer.</li> <li>GWClimate is a groundwater monitoring and modelling project. This data may be useful in relation to Flood Risk Assessment (FRA) and management plans. Maps and data are available on the Map viewer.</li> <li>GSI has completed Groundwater Protection Schemes (GWPSs).</li> </ul>	<p>Suggestions for data sources and guidelines and comments have been taken into account and considered through the assessment stages.</p>

**Environmental Authority****Summary of Submission****Response / Comment****Geological Mapping**

- GSI maintains online datasets of bedrock and subsoils geological mapping that are reliable and accessible.
- GSI would encourage the use this data.
- Information on the bedrock and Quaternary 3D models of Dublin is available.
- Information and download instructions for the Quaternary 3D model of Cork is available.

**Geotechnical Database Resources**

- GSI encourage the use of the national geotechnical database and viewer as part of any baseline geological assessment of the proposed development as it can provide invaluable baseline data for the region or vicinity of proposed development areas.
- This information may be beneficial and cost saving for any site-specific investigations that may be designed as part of any cycle infrastructure development projects.

**Geohazards**

- GSI recommend that geohazards be taken into consideration, especially when developing areas where these risks are prevalent, and we encourage the use of our data when doing so.
- GSI has information available on landslides in Ireland via the National Landslide Database and Landslide Susceptibility Map.
- GSI has engaged in a national project on Groundwater Flooding. The data from this project may be useful in relation to Flood Risk Assessment (FRA) and management plans.

**Natural Resources (Minerals/Aggregates)**

- GSI highlights the consideration of mineral resources and potential resources as a material asset which should be explicitly recognised within the environmental assessment process.
- GSI provides data, maps, interpretations and advice on matters related to minerals, their use and their development.
- The Active Quarries, Mineral Localities and the Aggregate Potential maps are available on the Map Viewer.
- GSI would recommend use of the Aggregate Potential Mapping viewer to identify areas of High to Very High source aggregate potential within the area.
- GSI would recommend use of our data and mapping viewers to identify and ensure that natural resources used in the proposed cycle infrastructure development projects are sustainably sourced from properly recognised and licensed facilities, and that consideration of future resource sterilization is considered.

**Geochemistry of Soils, Surface Waters and Sediments**

- GSI note reference to potential issues to land, soil and geology in Section 5.6.6, and recommend use of the following datasets that may be of benefit.
- GSI provides baseline geochemistry data for Ireland as part of the Tellus programme. Baseline geochemistry data can be used to assess the chemical status of soil and water at a regional scale and to support the assessment of existing or potential impacts of human activity on environmental chemical quality.

Environmental Authority	Summary of Submission	Response / Comment
	<ul style="list-style-type: none"> <li>At present, mapping consists of the border, western and midland regions. Data is available at <a href="https://www.gsi.ie/en-ie/data-and-maps/Pages/Geochemistry.aspx">https://www.gsi.ie/en-ie/data-and-maps/Pages/Geochemistry.aspx</a>. This page also hosts urban geochemistry mapping (Dublin SURGE project), Geochemical Mapping of Agricultural and Grazing Land Soil of Europe (GEMAS) and litho-geochemistry (rock geochemistry) from southeast Ireland datasets. Geological Survey Ireland and partners are undertaking applied geochemistry projects to provide data for agriculture (Terra Soil), waste soil characterisation (Geochemically Appropriate Levels for Soil Recovery Facilities) and mineral exploration (Mineral Prospectivity Mapping).</li> </ul> <p><b>Historic Mines</b></p> <ul style="list-style-type: none"> <li>The EPA, GSI and the former Exploration &amp; Mining Division undertook a joint project entitled "Historic Mine Site - Inventory and Risk Characterisation (HMS - IRC)". This project carried out detailed site investigations and characterisation on priority historic mine sites in the country.</li> <li>A final report and a GIS geodatabase was produced on completion of the project. The project provides an understanding of the impacts of historic mining sites in Ireland and their status at the time of the study. Reports and maps are available.</li> </ul> <p><b>Marine and Coastal Unit</b></p> <ul style="list-style-type: none"> <li>GSI Marine and Coastal Unit in partnership with the Marine Institute, jointly manages INFOMAR, Ireland's national marine mapping programme; providing key baseline data for Ireland's marine sector.</li> <li>Of particular interest to tourism is the extensive database of shipwrecks mapped by the INFOMAR programme.</li> <li>GSI recommend use of our Marine and Coastal Unit datasets available on our website and Map Viewer.</li> <li>The Marine and Coastal Unit also participate in coastal change projects such as CHERISH (Climate, Heritage and Environments of Reefs, Islands, and Headlands) and are undertaking mapping in areas such as coastal vulnerability and coastal erosion. Further information is available.</li> </ul> <p><b>Coastal Vulnerability Index</b></p> <ul style="list-style-type: none"> <li>GSI is undertaking a new coastal vulnerability mapping initiative.</li> <li>Maps produced provide an insight into the relative susceptibility of the Irish coast to adverse impacts of sea-level rise through the use of a Coastal Vulnerability Index (CVI). Currently the project is being carried out on the east coast and will be rolled out nationally.</li> </ul> <p><b>Physiographic Units</b></p> <ul style="list-style-type: none"> <li>Physiographic Units are cartographic representations of the broad-scale physical landscape of a region.</li> <li>They are valuable for regional land-use planning, and in studies of the influence of physical landscape on the ecological environment.</li> <li>This map is produced in support of the actions to be implemented in National Landscape Strategy for Ireland 2015-2025.</li> <li>Physiographic Units map data can be viewed online under the Physiographic Units tab on the online Map Viewer.</li> </ul> <p><b>Guidelines</b> The following guidelines may also be of assistance:</p>	

Environmental Authority	Summary of Submission	Response / Comment
3. Environmental Protection Agency (EPA)	<ul style="list-style-type: none"> <li>Institute of Geologists of Ireland, 2013. <i>Guidelines for the Preparation of the Soils, Geology and Hydrogeology Chapters of Geology in Environmental Impact Statements.</i></li> <li>National Roads Authority, 2009. <i>Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.</i></li> </ul> <p><b>Other Comments</b></p> <ul style="list-style-type: none"> <li>Should development go ahead, GSI would much appreciate a copy of reports detailing any site investigations carried out.</li> <li>The data would be added to GSI's national database of site investigation boreholes, implemented to provide a better service to the civil engineering sector.</li> <li>GSI's Publicly Available Datasets Relevant to Planning, EIA and SEA processes, attached.</li> </ul>	
	<ul style="list-style-type: none"> <li>The EPA is one of the statutory environmental authorities under the SEA Regulations.</li> <li>Our role is to focus on promoting the full and transparent integration of the findings of the Environmental Assessment into the Plan and advocating that the key environmental challenges for Ireland are addressed as relevant and appropriate to the plan.</li> <li>Our functions as an SEA environmental authority do not include approving or enforcing SEAs or plans</li> <li>Submission highlights some additional key plans and programmes for consideration (Appendix 1), as well as some comments on the SEA objectives and some additional resources (Appendix II) that may assist the SEA.</li> <li>The EPA may provide additional comments upon receipt of the SEA Environmental Report and draft Plan at the next stage of the SEA process.</li> </ul> <p><b>State of the Environment Report – Ireland's Environment 2020</b></p> <ul style="list-style-type: none"> <li>In preparing the Plan and SEA, the recommendations, key issues and challenges described within our State of the Environment Report Ireland's Environment – An Integrated Assessment 2020 (EPA, 2020) should be considered, in preparing the Plan and SEA as relevant and appropriate.</li> <li>Chapter 11 - Environment and Transport. A sustainable mobility transformation is required, with the next decade crucial, whereby necessary journeys are made by sustainable modes such as walking, cycling and public transport, followed by using electric vehicles where unavoidable. Shifting to these modes is an essential part of a sustainable and climate-neutral transition for the transport sector.</li> <li>Chapter 14 - Environment, Health and Wellbeing. Providing health-promoting environments is an essential requirement for healthy, thriving and inclusive communities. Providing integrated health-promoting environments in urban planning can promote more active travel, reduce air pollution through the use of fewer private vehicles, act as quiet areas buffered from environmental noise and improve the physical and mental health of those cycling.</li> <li>Other chapters in the report relating to Air Quality (Chapter 3) and Noise (Chapter 4) may also be useful to consider in the preparation of the SEA.</li> </ul> <p><b>Transition to a low carbon climate resilient economy and society.</b> <b>Monitoring, Review &amp; Reporting:</b></p>	<p>State of the Environment Report has been reviewed and information included in the updated baseline overview.</p> <p>The monitoring programme for the SEA process will be developed following consultation on the NCN Plan and set out in the SEA Adoption Statement.</p> <p>Limitations of the assessment process have been acknowledged in the Environmental Report.</p> <p>Policy and plan review and baseline information has been updated to reflect comments.</p> <p>Other comments have been considered in preparation of the Environmental Report and undertaking of the assessments.</p>

Environmental Authority	Summary of Submission	Response / Comment
	<ul style="list-style-type: none"> <li>• The Plan should include a commitment to implement the environmental monitoring programme and associated reporting. It would be useful to include a separate section on 'Monitoring, Review and Reporting' within the Plan, setting out the provisions for monitoring and reporting on the implementation of the Plan and any periodic reviews of the Plan. There may be merits in aligning the periodic reviews of the Plan with existing cyclical reporting e.g., Ireland's Environment, National Planning Framework, etc.</li> <li>• In between review periods for the Plan, we recommend that Plan-related implementation reports are published annually, or biennially, as appropriate. We recommend aligning this Plan related monitoring / reporting with the environmental monitoring required under the SEA legislation.</li> <li>• The SEA-related monitoring should address positive, negative and cumulative effects where they are likely to occur and should include provision for on-going review to facilitate an early response to any environmental issues that may arise.</li> <li>• The Environmental Report should specify the monitoring frequency and responsibilities and include provisions for reporting on the monitoring. To avoid duplication in data collection, the same indicators should be used for the plan-related and SEA-related monitoring where possible.</li> </ul>	
	<p><b>Data &amp; Knowledge Gaps</b></p>	
	<ul style="list-style-type: none"> <li>• The Plan should identify any significant data and knowledge gaps, include commitments to help address these on a priority basis during the implementation phase of the Plan.</li> </ul>	
	<p><b>Alignment with other key plans and programmes</b></p>	
	<ul style="list-style-type: none"> <li>• We recommend including schematics in the Plan and SEA Environmental Report, showing the links and key inter-relationships with other key relevant national, regional, sectoral and environmental plans.</li> <li>• The relevant objectives and policy commitments of the NPF, RSES should be aligned with and considered, as appropriate. In particular, the Plan should take account of the National Strategic objective in the NPF on Sustainable Mobility where investment will be made to progressively put in place sustainable alternatives to those currently available. Furthermore, the Plan should show clear connectivity between the objectives and goals of other national, regional and local transport strategies, e.g. metropolitan area transport strategies.</li> <li>• List of plans / programmes included in scoping report should be reviewed to ensure that it does not include legislation that has been revoked or previous versions of plans, e.g. All Ireland Pollinator Plan, River Basin Management Plan.</li> <li>• In addition to the plans and programmes listed, it may also be useful to consider the following in the SEA: <ul style="list-style-type: none"> <li>– Fáilte Ireland Visitor Experience Development Plans;</li> <li>– Metropolitan Area Transport Plans;</li> <li>– Regional Tourism Plans (currently being developed by Fáilte Ireland);</li> <li>– Healthy Cities Project;</li> <li>– Clean Air Strategy – currently released for consultation</li> <li>– Proposed Solid Fuel Regs.</li> <li>– Dublin Action Plan for Nitrogen Dioxide (December 2021).</li> <li>– WHO Global Air Quality Guidelines 2021.</li> </ul> </li> </ul>	

## Environmental Authority

## Summary of Submission

## Response / Comment

- Urban Transport Related Air Pollution (UTRAP) Working Group.

**Research**

- Department of Transport - Demand Management Study, 2021.
  - This study helps to better understand what drives transport demand and how a greater shift to more sustainable and healthier forms of travel can be encouraged in Ireland's five largest urban centres.
- NEAR Health Research Project.
  - The toolkit highlights (1) how people value and experience nature, health and wellbeing, (2) the barriers and bridges to nature connection, (3) what people want from their healthy future environment and (4) how nature-based activities can benefit people's health and wellbeing and enable them to develop a deeper connection with their wider community and with nature. Connecting with nature helps people to care more for the environment and promotes positive wellbeing.
- Green and Blue Spaces and Health: A Health-led approach.
  - This research was based on a 12-month desk study that modelled, for identified sample sites, the relationships between health indicators and the availability of green and blue infrastructure (GBI).
- Eco-Health: Ecosystem Benefits of Greenspace for Health.
  - The Eco-Health project seeks to inform public health and spatial planning policy and the important interlinkages between environmental quality and health and well-being.

**Commitment****Biodiversity**

- The Plan should integrate available habitat mapping and take account of important green infrastructure/ecological corridors in the Plan area. A commitment should be included to protect designated national and European sites in implementing the Plan. Aspects such as recognising the need to control and manage the potential spread of invasive species should also be considered. Additionally, the National Biodiversity Action Plan and All-Island Pollinator Plan should be integrated into the Plan.

**Scope of the SEA**

- The Plan should clearly set out the scope, remit and implementation related elements of the Plan. These will have implications for the SEA, in terms of guiding the level of assessment applicable at the appropriate level for the Plan. Where it is envisaged that measures proposed in the Plan will be implemented via other plans, which themselves have been or will be subject to SEA, this should be explained in the Environmental Report and taken into account in the assessment.

**Available Guidance & Resources**

- SEA process guidance and checklists.
- Inventory of spatial datasets relevant to SEA.
- Topic specific SEA guidance (including *Good practice guidance on Cumulative Effects Assessment* (EPA, 2020), *Guidance on SEA Statements and Monitoring* (EPA, 2020), *Integrating climatic factors into SEA* (EPA, 2019), *Developing and Assessing Alternatives in SEA* (EPA, 2015), and *Integrated Biodiversity Impact Assessment* (EPA, 2012)).



Environmental Authority	Summary of Submission	Response / Comment
<b>4. Department of Agriculture, Environment and Rural Affairs (DAERA): Northern Ireland Environment Agency (NIEA)</b>	<ul style="list-style-type: none"> <li>Environmental Sensitivity Mapping (ESM) Webtool. Available at: <a href="http://www.enviromap.ie">www.enviromap.ie</a></li> <li>EPA SEA Search and Reporting Tool. Available at: <a href="https://gis.epa.ie/EPAMaps/SEA">https://gis.epa.ie/EPAMaps/SEA</a></li> <li>EPA WFD Application. Available at: <a href="http://www.Catchments.ie">www.Catchments.ie</a>.</li> <li>EPA AA Geo Tool. Available at: <a href="https://gis.epa.ie/EPAMaps/AAGeoTool">https://gis.epa.ie/EPAMaps/AAGeoTool</a></li> </ul>	
	<ul style="list-style-type: none"> <li>DAERA would like the SEA Environmental Report to contain a clear statement indicating the opinion about whether or not the implementation of the of the strategy is likely to have a significant effect on Northern Ireland, in combination with any identified measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment.</li> </ul> <p><b>Natural Environment Division (NED) Comments</b></p> <ul style="list-style-type: none"> <li>NIEA NED works to ensure that Northern Ireland’s special natural environment, including its flora and fauna and landscapes, is conserved, enhanced and managed for the benefit of this and future generations, thereby contributing to sustainable development.</li> <li>We note that it is proposed to integrate the network with NI as appropriate and that some of the broadly identified corridors will reach the border with NI and may have potential to have an effect on NI. Transboundary issues don’t appear to have been highlighted specifically within the scoping report.</li> <li>We advise that transboundary issues are taken into account in the Environmental report.</li> <li>We would highlight consideration of the following issues including the potential disturbance to/impact on NI / ROI migratory/mobile species such as salmon, for example Lough Melvin Special Area of Conservation which lies within both NI and the ROI. Cross border designated sites, European sites in NI adjacent to or with pathways to/from the ROI, priority habitats, river basins, and other landscape types also require special attention as ecological functionality and ‘views’ of landscape cross political boundaries.</li> <li>The SEA should consider all potential impacts including those which may impact NI both directly and indirectly.</li> <li>NI baseline conditions and relevant plans and programmes will need to be considered as part of the Environmental Report.</li> <li>Other than the issues highlighted above NED are content with the overall approach to SEA and the issues that will be addressed including the consideration of how Environmental impacts will be addressed and mitigated, this should include potential impacts on NI.</li> <li>NED are in agreement and welcome the completion of a Habitats Regulations Assessment (AA) in parallel to the SEA.</li> <li>We welcome that mitigation and monitoring will be put in place in due course and look forward to the opportunity to comment further as the process develops.</li> </ul> <p><b>Data Worth Considering</b></p> <ul style="list-style-type: none"> <li>The Wildlife (NI) Order 1985 (as amended).</li> <li>Wildlife and Natural Environment Act (NI) 2011.</li> <li>The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended).</li> </ul>	<p>Additional information relating to Northern Ireland’s environment has been included, including baseline information. Transboundary effects have been assessed and presented in the Environmental Report. Data sources have been considered through updates to the baseline information relating to Northern Ireland. Comments related to AA have been noted and fed back to AA team.</p>

Environmental Authority	Summary of Submission	Response / Comment
	<ul style="list-style-type: none"> <li>• The Environment (NI) Order 2002.</li> <li>• The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017.</li> <li>• The Strategic Planning Policy Statement (SPPS) for Northern Ireland.</li> <li>• Planning Policy Statements (PPS – in particular PPS2 and PPS18). It should be noted that the PPS's will be superseded by Local Development Plans when they are adopted.</li> <li>• Biodiversity Strategy for NI to 2020 <a href="https://www.daera-ni.gov.uk/publications/biodiversity-strategy-northern-ireland-2020-0">https://www.daera-ni.gov.uk/publications/biodiversity-strategy-northern-ireland-2020-0</a></li> <li>• Draft Environment Strategy <a href="https://www.daera-ni.gov.uk/consultations/esni-public-discussion-document">https://www.daera-ni.gov.uk/consultations/esni-public-discussion-document</a></li> <li>• The Draft NI peatland policy: <a href="https://www.daera-ni.gov.uk/consultations/ni-peatland-strategy-consultation">https://www.daera-ni.gov.uk/consultations/ni-peatland-strategy-consultation</a></li> <li>• The Draft Green Growth Strategy.</li> <li>• Northern Ireland Energy Strategy 2050.</li> </ul> <p><b>Other useful information sources</b></p> <ul style="list-style-type: none"> <li>• NI State of the Environment Reports: <a href="https://www.daera-ni.gov.uk/publications/state-environment-report-2013">https://www.daera-ni.gov.uk/publications/state-environment-report-2013</a></li> <li>• NI Environmental Statistics Reports: <a href="https://www.daera-ni.gov.uk/articles/northern-ireland-environmental-statistics-report">https://www.daera-ni.gov.uk/articles/northern-ireland-environmental-statistics-report</a></li> </ul> <p><b>Other Relevant Web-Links</b></p> <ul style="list-style-type: none"> <li>• Designated Scientific Sites: <a href="http://www.daera-ni.gov.uk/landing-pages/protected-areas">www.daera-ni.gov.uk/landing-pages/protected-areas</a></li> <li>• Regional Landscape Character Map viewer: <a href="https://www.daera-ni.gov.uk/services/regional-landscape-character-areas-map-viewer">https://www.daera-ni.gov.uk/services/regional-landscape-character-areas-map-viewer</a></li> <li>• DAERA - map browser for NI protected sites and known priority habitat: <a href="http://www.daera-ni.gov.uk/services/natural-environment-map-viewer">www.daera-ni.gov.uk/services/natural-environment-map-viewer</a></li> </ul> <p><b>Natural Environment Datasets</b></p> <ul style="list-style-type: none"> <li>• <a href="http://www.daera-ni.gov.uk/articles/download-digital-datasets">www.daera-ni.gov.uk/articles/download-digital-datasets</a></li> <li>• AA should refer to the status of habitats and species in the relevant reports available on the JNCC website as follows: UK Article 17 report for the Habitats Directive <a href="https://jncc.gov.uk/our-work/article-17-habitats-directive-report-2019/">https://jncc.gov.uk/our-work/article-17-habitats-directive-report-2019/</a> and the UK Article 12 report for the Birds Directive <a href="https://jncc.gov.uk/our-work/european-reporting/#birds-directive-reporting">https://jncc.gov.uk/our-work/european-reporting/#birds-directive-reporting</a></li> <li>• Please note following the decision of the United Kingdom to leave the European Union, the collective term of “Natura 2000” sites the network of European protected sites are known as “National Site Network” sites within NI.</li> </ul> <p><b>Climate Change Unit comments</b></p> <ul style="list-style-type: none"> <li>• Climate Change Mitigation Branch refers the Transport Infrastructure Ireland to the requirements laid out within the UK Climate Change Committee’s (CCC) Sixth Carbon Budget publication. Link: <a href="https://www.theccc.org.uk/publication/sixth-carbon-budget/">https://www.theccc.org.uk/publication/sixth-carbon-budget/</a></li> </ul>	

Environmental Authority	Summary of Submission	Response / Comment
	<ul style="list-style-type: none"> <li>The CCC recently published its UK Climate Risk Independent Assessment 2021 which identifies the risk and opportunities posed by CC over the next five years. A summary for NI: <a href="https://www.ukclimaterisk.org/independent-assessment-ccra3/national-summaries/">https://www.ukclimaterisk.org/independent-assessment-ccra3/national-summaries/</a></li> </ul> <p><b>Drinking Water Inspectorate Comments</b></p> <ul style="list-style-type: none"> <li>We are appreciative of the consideration given to Article 7 of the WFD: areas designated for the abstraction of water intended for human consumption. Consultation with the NI primary water undertaker (Northern Ireland Water Ltd (NI Water)) is routinely encouraged as the nationwide basins are utilised by NI Water to provide the public supply of water. Consideration should be given to the location of any infrastructure and protection of Drinking Water Protected Areas.</li> <li>If public drinking sources could be impacted, mitigation actions must be provided to ensure quality / sufficiency of supply.</li> <li>Consultation with NI is also encouraged (early stage), in order to establish capability of the public water system infrastructure if required, e.g., increase in tourism leading to an increased demand for supply.</li> <li>Furthermore, a development must not impact on either the quality or sufficiency of a private water supply, and mitigation measures must be put in place, where required, in the protection of such drinking water supplies. Quality standards for private supplies in Ireland are detailed in European Communities (Drinking Water) Regulations 2014 (S.I. 122 of 2014) which is already included in the scoping document. For works which extend to NI, The Private Water Supplies Regulations (Northern Ireland) 2017 regulate the water quality.</li> <li>Dependent on the scale, type, location and the potential impacts the proposal may have on such supplies the developer should, if appropriate, undertake a scoping exercise to determine the location of any private water supplies. Details on undertaking a search for potential private water supplies in NI available at: <a href="http://drinkingwaterinspectorate.daera-ni.gov.uk">Drinking Water Inspectorate Viewer (daera-ni.gov.uk)</a></li> </ul> <p><b>Water Management Unit Comments</b></p> <ul style="list-style-type: none"> <li>The SEA should consider all transboundary issues, including the potential disturbance to/impact on NI / ROI migratory / mobile species such as salmon, for example within the Lough Melvin Special Area of Conservation which lies within both NI and the ROI. Such species rely and can be impacted upon water quality and water resource issues.</li> <li>Cross border river basins require special attention as ecological functionality cross jurisdictional boundaries. The SEA should consider all potential impacts including those which may impact NI both directly and indirectly.</li> </ul>	
<p><b>5. Department for Communities: Historic Environment Division (HED)</b></p>	<ul style="list-style-type: none"> <li>HED operate via a Service Level Agreement with colleagues in DAERA in relation to SEA. HED welcomes that cultural heritage has been scoped in for assessment, and that the plan proposals seek to integrate with existing and proposed cycling infrastructure in NI. Consideration and assessment of likely impacts on transboundary heritage assets will therefore be required in relation to this topic in the Environmental Report.</li> <li>A large number of heritage assets predate the border itself and some, which have the potential to be utilized as cycle routes, such as canals, disused railways etc. The transboundary qualities such as the inter-relationships of sites, buildings and places and the potential effects with regard to impacts on their settings and the understanding and the experience of them should also be considered.</li> <li>HED welcomes the intent of the plan to make the historic environment more accessible to the public through sustainable transport means. Given the proposals will involve development of routes within predominantly rural areas,</li> </ul>	<p>Comments on transboundary elements noted.</p> <p>Comments on reuse and rejuvenation of heritage assets noted and opportunities to enhance understanding of the historic environment considered throughout the assessment.</p>

Environmental Authority	Summary of Submission	Response / Comment
	<p>opportunities to conserve or reuse heritage assets, e.g., industrial or vernacular buildings/ structures as ancillary facilities for cyclists would serve to meet Cultural Heritage Objectives outlined in 5.10.7. Opportunities to enhance understanding of local heritage along cycle routes e.g., through information points, signage etc.</p> <ul style="list-style-type: none"> <li>Acknowledging the NCN plan will identify, at a strategic-level, key corridors for interventions and set the framework for subsequent plans and projects which have the potential for significant effects on transboundary cultural heritage, the relevant international conventions.</li> </ul> <p><b>International Conventions</b></p> <ul style="list-style-type: none"> <li>Convention for the Protection of the Architectural Heritage of Europe (Granada, 1985).</li> <li>Convention for the Protection of the Archaeological Heritage of Europe (Valletta, 1992).</li> </ul> <p><b>Legislation</b></p> <ul style="list-style-type: none"> <li>Fisheries Act 2020.</li> <li>Planning Act (Northern Ireland) 2011.</li> <li>Historic Monuments and Archaeological Objects (Northern Ireland) Order 1995.</li> <li>Protection of Wrecks Act 1973.</li> </ul> <p><b>Regional Strategies and policies</b></p> <ul style="list-style-type: none"> <li>Regional Development Strategy 2035 (infrastructure-ni.gov.uk) - Spatial strategy for NI.</li> <li>Archaeology 2030 - A Strategic Approach for Northern Ireland (niheritagedelivers.org).</li> <li>Strategic Planning Policy Statement, Paragraphs 6.1-6.30 outlines the strategic planning policy around heritage assets in NI.</li> <li>HED on behalf of DfC maintains and augments the Historic Environment Record of Northern Ireland (HERoNI), which includes records of designated and non-designated heritage assets. This information may aid understanding of the historic landscape context and heritage assets. This should be used to understand where there is a likelihood or potential for impact on cultural heritage, the associated constraints, and potential mitigation measures.</li> <li>Datasets are available at Historic Environment Digital Datasets and can also be viewed through our historic environment map viewer Historic Environment Map Viewer.</li> </ul>	Additional policies and plans included in context review.

## **Appendix B: Corridor Options Assessment Tables**

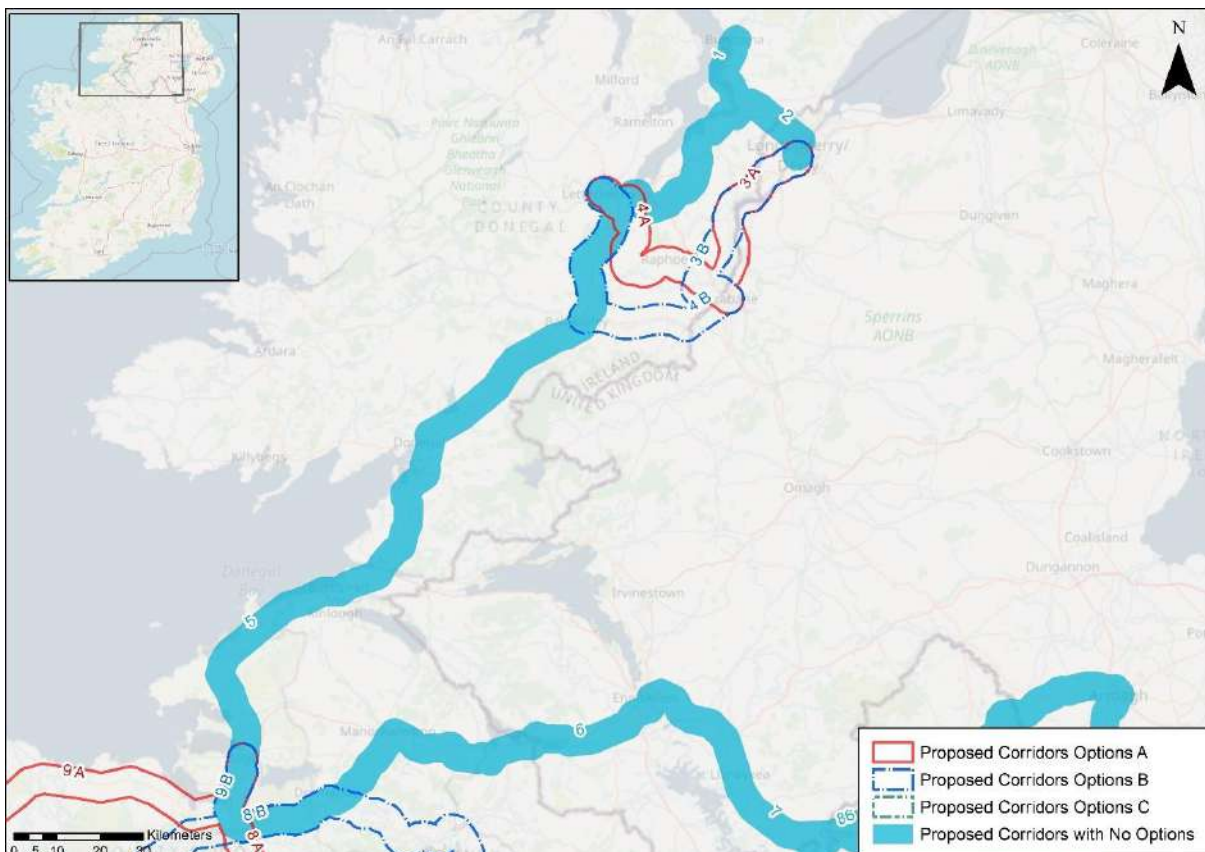
This appendix includes a series of tables presenting the assessment of the corridor options considered for the NCN as ‘reasonable alternatives’ through the SEA.

These options, which have been mapped below, explore different potential corridors for linking the nodes identified for the NCN.

The tables presented in this appendix examine the likely effects of the corridor options in relation to each of the SEA Themes. These utilise the scorings represented in the key below. Where two or more options have been proposed between nodes, a ranking of the relative sustainability merits has also been provided, with ‘1’ as the option deemed to be most favourable in relation to the SEA Theme.

**Key:**

Negative
Neutral impact
Positive impact
Uncertain impact



**Figure B1: Map of corridor options 1, 2, 3, 4 and 5**

**Table 1. Appraisal Relating to Corridor 1 Buncrana to Letterkenny / Derry**

SEA Theme	Summary of the Potential Effects Associated with Corridor 1 Buncrana to Letterkenny / Derry	Impact
<b>Biodiversity</b>	The corridor traverses along the edge of Lough Swilly Special Area of Conservation (SAC) and Special Protection Area (SPA), and Lough Swilly Including Big Isle, Blanket Nook & Inch Lake proposed Natural Heritage Area (pNHA), from approximately Buncrana to Magherbeg. Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing transport infrastructure where practicable. Any works within or adjacent to the designated sites could result in potential significant impacts. These designated sites and key sensitivities associated with the designations would need to be considered when determining the final route during subsequent scheme development.	<b>Uncertain</b>
<b>Population and Human Health</b>	The corridor would link Derry with Buncrana and Letterkenny. The route would support accessibility to the wide range of services and facilities available in Derry from settlements along the route, and also support accessibility to the amenities available in Buncrana (population c.6750) and Letterkenny (population c.19,300). An enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the route and support community vitality.	<b>Positive</b>
<b>Land and Soils</b>	Land uses along the proposed corridor / in the area varies and includes areas of urban fabric (artificial surfaces) in Buncrana and Letterkenny and sport and leisure facilities (artificial surfaces), beaches, dunes, sands (forest and semi-natural areas), intertidal flats (wetlands) and pastures (agricultural areas) as per CORINE 2018. Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.	<b>Uncertain</b>
<b>Water</b>	Several watercourses occur along the route of the proposed corridor, including the Mill and Skeoge watercourses. The WFD status of these watercourses were 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.	<b>Uncertain</b>
<b>Air Quality</b>	The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Buncrana and Magherbeg. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.	<b>Positive</b>
<b>Climate Change</b>	The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport. The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.	<b>Uncertain</b>
<b>Cultural Heritage</b>	A range of cultural heritage assets are present within the proposed corridor, such as a Megalithic tomb (DG038-011) and a bridge (Reg. No. 40815015). Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage (archaeological) assets which may occur along the proposed corridor.	<b>Uncertain</b>
<b>Landscape</b>	The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes. More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.	<b>Positive</b>

**Table 2. Appraisal Relating to Corridor 2 Derry to Letterkenny**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 2 Derry to Letterkenny</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>The corridor traverses the Lough Swilly SAC, SPA, and Lough Swilly Including Big Isle, Blanket Nook &amp; Inch Lake pNHA near Inch Level and along a passageway crossing Drongawn Lough near Magheramore. These designated sites and key sensitivities associated with the designations would need to be considered when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Derry with Letterkenny. The route would support accessibility to the wide range of services and facilities available in Derry from settlements along the route, and also support accessibility to the amenities available in Letterkenny (population c.19,300). This includes from Newtowncunningham. An enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the route and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / in the area varies and includes areas of urban fabric (artificial surfaces), industrial or commercial units (artificial surfaces) in Derry City and Letterkenny and also areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and complex cultivation patterns (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including Dooballagh Burn and Leslie Hill Stream and the Swilly Estuary. The WFD status of these watercourses ranged between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranged from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Derry City and Letterkenny. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a ringfort (DG047-007), mill (Reg. No. 40904724) and railway station (Reg. No. 40502131).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>



Table 3. Appraisal Relating to Corridor 3 Derry to Strabane

SEA Theme	Summary of the Potential Effects Associated with Corridor 3 Derry to Strabane	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A &amp; B:</b> Option A runs adjacent to the River Finn SAC, and River Foyle, Mongavlin to Carrigans pNHA between Carrigans and Lifford. Option B runs adjacent to the River Finn SAC, and River Foyle, Mongavlin to Carrigans pNHA between Carrigans and Mongavlin.</p> <p>Both options cross the designated sites near Cloghfin and cross the River Finn SAC near Lifford. The River Foyle and Tributaries SAC and Area of Special Scientific Interest (ASSI) is also located in this area. <b>Option B</b> it is located further away from designated habitats (where the routes diverge).</p> <p>These designated sites and key sensitivities associated with the designations would need to be considered when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing transport infrastructure where practicable.</p>	2	1
<b>Population and Human Health</b>	<p>Both <b>Options A &amp; B</b> would support accessibility to the wide range of services and facilities available in Derry from locations along the corridor options, and also support accessibility to the amenities available in Strabane in Northern Ireland (population c.13,250), including from Lifford to the north west of the town. An enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the route and support community vitality.</p> <p>Given Option A would deliver a slightly shorter route between Derry and Strabane, the option may bring additional benefits through enhanced useability.</p>	1	2
<b>Land and Soils</b>	<p><b>Options A &amp; B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Derry City and Strabane and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=
<b>Water</b>	<p><b>Options A &amp; B:</b> Several watercourses occur along the route of the proposed corridor, including Swilly Burn, River Deele and the Swilly Estuary. The WFD status of these watercourses along this route were 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranged from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Derry City and Strabane. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=
<b>Cultural Heritage</b>	<p><b>Options A &amp; B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 40830010), ringfort (DG063-006----) and the Historic town (DG071-008--).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

**Table 4. Appraisal Relating to Corridor 4 Letterkenny to Strabane**

SEA Theme	Summary of the Potential Effects Associated with Corridor 4 Letterkenny to Strabane	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> The corridor runs adjacent to Lough Swilly SAC and Lough Swilly including Big Isle, Blanket Nook &amp; Inch Lake pNHA near Letterkenny, and crosses the River Finn SAC near Lifford. These designated sites and key sensitivities associated with the designations would need to be considered when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable.</p> <p><b>Option B:</b> This corridor runs adjacent to the River Finn SAC from near Stranorlar to Strabane. The corridor crosses the SAC near Ballylast. These designated sites and key sensitivities associated with the designations would need to be considered when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable.</p> <p>Option A is located further away from the River Finn SAC than Option B.</p>	1	2
<b>Population and Human Health</b>	<p>Both <b>Options A &amp; B</b> would support accessibility to the wide range of services and facilities available in Strabane in Northern Ireland (population c.13,250) and Letterkenny (population c.19,300) from settlements along the corridor options. In this respect Option A would enhance accessibility from Convoy (population c.1,500) and Raphoe (population c.1,090), and Option B would enhance accessibility from Ballybofey-Stranorlar (population c. 4,850).</p> <p>An enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. Both corridor options also have the potential to bring benefits for the visitor economy along the route and support community vitality.</p>	=	=
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Letterkenny and Strabane and areas of pastures (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area varies and includes areas of urban fabric (artificial surfaces) in Letterkenny, Stranorlar, Killygordon and Strabane and areas of pastures (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including Dooballagh Burn and Swilly Burn watercourses and the Swilly Estuary. The WFD status of these watercourses ranged between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranged from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including Dooballagh Burn and the River Finn and the Swilly Estuary. The WFD status of these watercourses ranged between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranged from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Letterkenny and Strabane. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 4 Letterkenny to Strabane	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 40905380), and bridge (Reg. No. 40905394).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a Church (Reg. No. 40905301), holy well (DG069-009----) and a house (Kia Meua - Reg. No. 40907839).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

**Table 5. Appraisal Relating to Corridor 5 Letterkenny to Sligo**

SEA Theme	Summary of the Potential Effects Associated with Corridor 5 Letterkenny to Sligo	Impact
<b>Biodiversity</b>	<p>Within the corridor there are approximately 12 SACs, 5 SPAs and 17 pNHAs and NHAs including for example, Bunduff Lough and Machair/Trawalua/Mullaghmore SAC and pNHA, Donegal Bay (Murvagh) SAC and pNHA, Donegal Bay SPA, Durnesh Lough SAC and pNHA, and Cummeen Strand SPA.</p> <p>These designated sites and key sensitivities associated with the designations would need to be considered when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Sligo (population 19,250) with Letterkenny (population c.19,300) via Ballybofey-Stranorlar (population c. 4,850), Donegal (population c.2,620), Ballyshannon (population c.2,300), Bundoran (population c.1,965) and Kinlough (population c.1,030). In this respect the corridor, through enhancing linkages, would support accessibility to the services, facilities and amenities available in these settlements. An enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the route and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area varies and includes areas of industrial or commercial units (artificial surfaces), urban fabric (artificial surfaces) in Donegal, Bundoran and Sligo and area of pastures (agricultural areas), transitional woodland-shrub (forest and semi-natural areas), land principally occupied by agriculture with significant areas of natural vegetation (agricultural areas), peat bogs (wetland), coniferous forests (forest and semi-natural areas), mixed forest (forest and semi-natural areas), sport and leisure facilities (artificial surfaces), waterbodies, road and rail network (artificial surfaces) and coniferous forests (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including Dooballagh Burn, River Daurnett, River Derg, Lowerymore River, Abbey River, River Bradoge and the River Drumcliff and the Garvogue Estuary and Erne. The WFD status of these watercourses ranged between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranged from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Letterkenny and Sligo. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a standing stone (DG069-006----), kiln (DG078-045----), bridge (Reg. No. 40908604), ringfort DG100-002----) and ringfort (SL003-027----).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

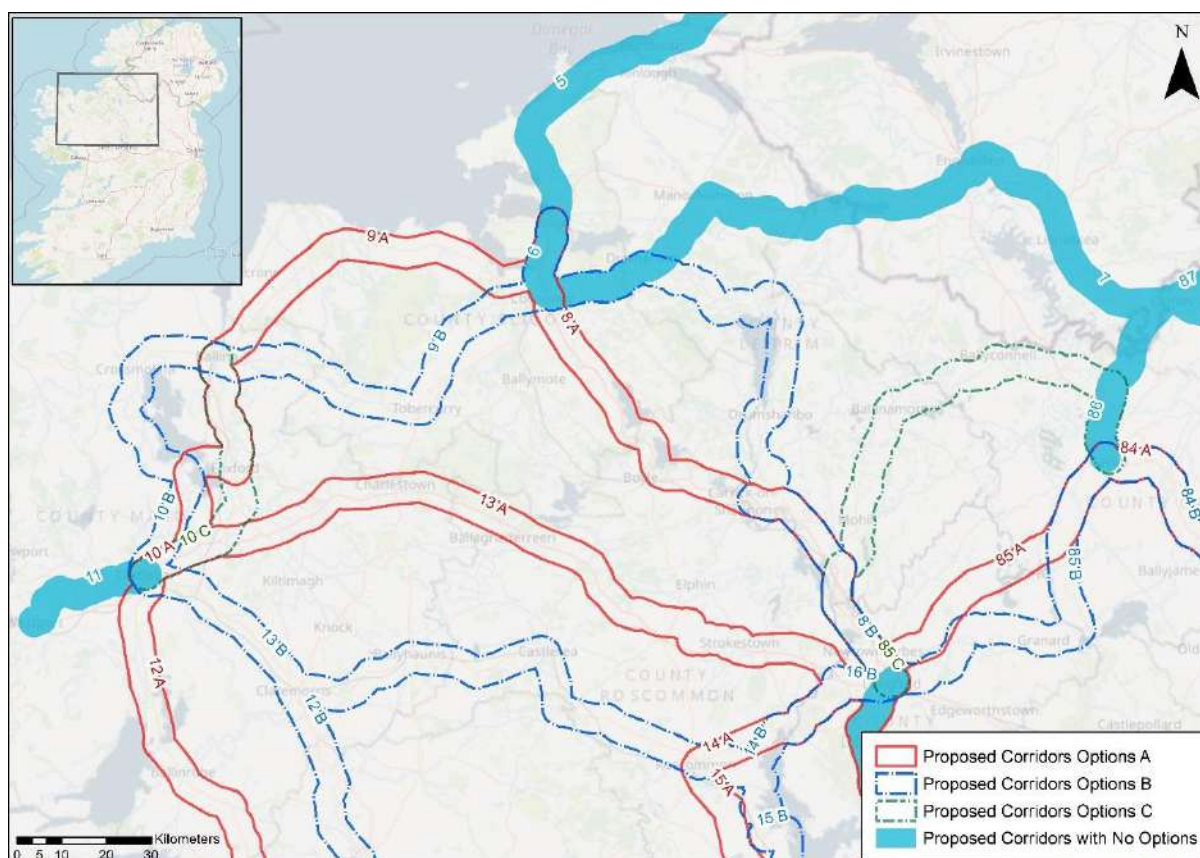


Figure B2: Map of corridor options 6, 7 and 8

Table 6. Appraisal Relating to Corridor 6 Sligo to Enniskillen

SEA Theme	Summary of the Potential Effects Associated with Corridor 6 Sligo to Enniskillen	Impact
<b>Biodiversity</b>	<p>Within the corridor there are approximately 8 SAC, 1 SPA, and 13 pNHA/NHA, including for example Ballysadare Bay SAC, SPA, and pNHA, Unshin River SAC and pNHA, Boleybrack Mountain SAC and pNHA, and Dough/Thur Mountains NHA. These designated sites and key sensitivities associated with the designations would need to be considered when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable, such as existing roads.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Sligo (population c.19,250) with Enniskillen (population c.13,650) via Manorhamilton (population c.1,475), supporting accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the route and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area varies and includes areas of urban fabric (artificial surfaces), road and rail network (artificial surfaces) in Enniskillen, Manorhamilton and Sligo town, and area of pastures (agricultural areas), peat bogs (wetland), land principally occupied by agriculture with significant areas of natural vegetation (agricultural areas), coniferous forests (forest and semi-natural areas), transitional woodland-shrub (forest and semi-natural areas), mixed forest (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require land-take from (agriculture) land, the impact to likely to be significant / uncertain.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the Ballysadare River, Killanummary River, Bonet River, Drumharriff Burn River and the Sillees River and Ballysadare Estuary. The WFD status of these watercourses ranged between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranged from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Enniskillen and Sligo. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>

SEA Theme	Summary of the Potential Effects Associated with Corridor 6 Sligo to Enniskillen	Impact
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a cathedral (Reg. No. 32012002), outbuilding (Reg. No. 32011012), ringfort (SL020-069----), ringfort (SL020-211----), ringfort (LE014-017----) and a railway station (Reg. No. 30805033).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 7. Appraisal Relating to Corridor 7 Enniskillen to Cavan**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 7 Enniskillen to Cavan</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>Within the corridor there are two SACs, two SPAs, and two pNHA/NHAs, including Lough Oughter and associated Loughs SAC and pNHA, Upper Lough Erne SAC, Slieve Beagh-Mullaghfad-Lisnaskea SPA, and Drumkeen House Woodland pNHA. These designated sites and key sensitivities associated with the designations would need to be considered when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Cavan (population c.10,900) with Enniskillen (population c.13,650) via Clones (population c.1,680), supporting accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the route and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area varies and includes urban fabric (artificial surfaces) in Enniskillen, Clones and Cavan town and areas of pastures (agricultural areas), forest (broad-leafed), forest and semi natural areas (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the Upper Lough Erne River, Colebrooke River, River Finn and the River Annalee. The WFD status of these watercourses ranged between 'good' and 'poor' during the 2013-2018 monitoring period.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Enniskillen and Cavan town. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 41401616), bridge (Reg. No. 41401625) and outbuilding (Reg. No. 40000450).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

Table 8. Appraisal Relating to Corridor 8 Longford to Sligo

SEA Theme	Summary of the Potential Effects Associated with Corridor 8 Longford to Sligo	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> In the vicinity of the corridor there are approximately eight SACs, three SPAs, and 24 pNHA/NHAs, including for example Ballykenny-Fisherstown Bog SPA, Lough Forbes Complex SAC and pNHA, Lough Arrow SAC, SPA and pNHA, Bricklieve Mountains and Keishcorran SAC and pNHA, and Ballysadare Bay SAC, SPA and pNHA. These designated sites and key sensitivities associated with the designations would need to be considered when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads where practicable.</p> <p><b>Option B:</b> In the vicinity of the corridor are approximately eight SACs, two SPAs, and 24 pNHA/NHAs, including for example Ballykenny-Fisherstown Bog SPA, Lough Forbes Complex SAC and pNHA, Drumhierny Wood pNHA, Lough Allen, South End and Parts pNHA, Cuilcagh - Anierin Uplands SAC and pNHA, and Ballysadare Bay SAC, SPA and pNHA. These designated sites and key sensitivities associated with the designations would need to be considered when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Longford (population c.10,010) with Sligo (population c.19,250) via Carrick-on-Shannon (population c.4,060). Option A will additionally provide linkages to Boyle (population c.2,570), Collooney (population c.1,610) and Ballisodare (population c.1,350). The corridor options will support accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the route and support community vitality.</p> <p>Option A, through linking additional settlements, will however bring additional benefits in relation to this SEA theme.</p>	1	2
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is varies and includes urban fabric (artificial surfaces) in Sligo town, Carrick-on-Shannon and Longford town and areas of pastures (agricultural areas), peat bogs (wetland) and forests (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes urban fabric (artificial surfaces) in Sligo town, Drumshanbo, Carrick-on-Shannon and Longford town and areas of pastures (agricultural areas), peat bogs (wetland) and forests (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p> <p>Option A is likely to perform more favourably in relation to this SEA theme as it aligns more along existing road infrastructure and would require less land-take (from agriculture).</p>	1	2
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Ballysodare River, Unshin River, Drumfin River, Boyle River and the River Shannon. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the Unshin River, Owengar River, River Shannon, Drumshanbo stream, Lough Allen Canel, River Eslin and River Camlin. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Sligo town and Longford town. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option A, through linking additional settlements, will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	1	2



SEA Theme	Summary of the Potential Effects Associated with Corridor 8 Longford to Sligo	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a manse (Reg. No. 32011011), house (Reg. No. 32309007), ringfort (SL034-187----), field system (RO006-195----), ringfort (RO006-097----) and house (Reg. No. 13008007).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a ringfort (SL020-211----), Ringfort (LE014-017----), house (Reg. No. 3080700), ringfort (LE020-006----), ringfort (LE031-051----) and a bridge (LF013-026004-).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

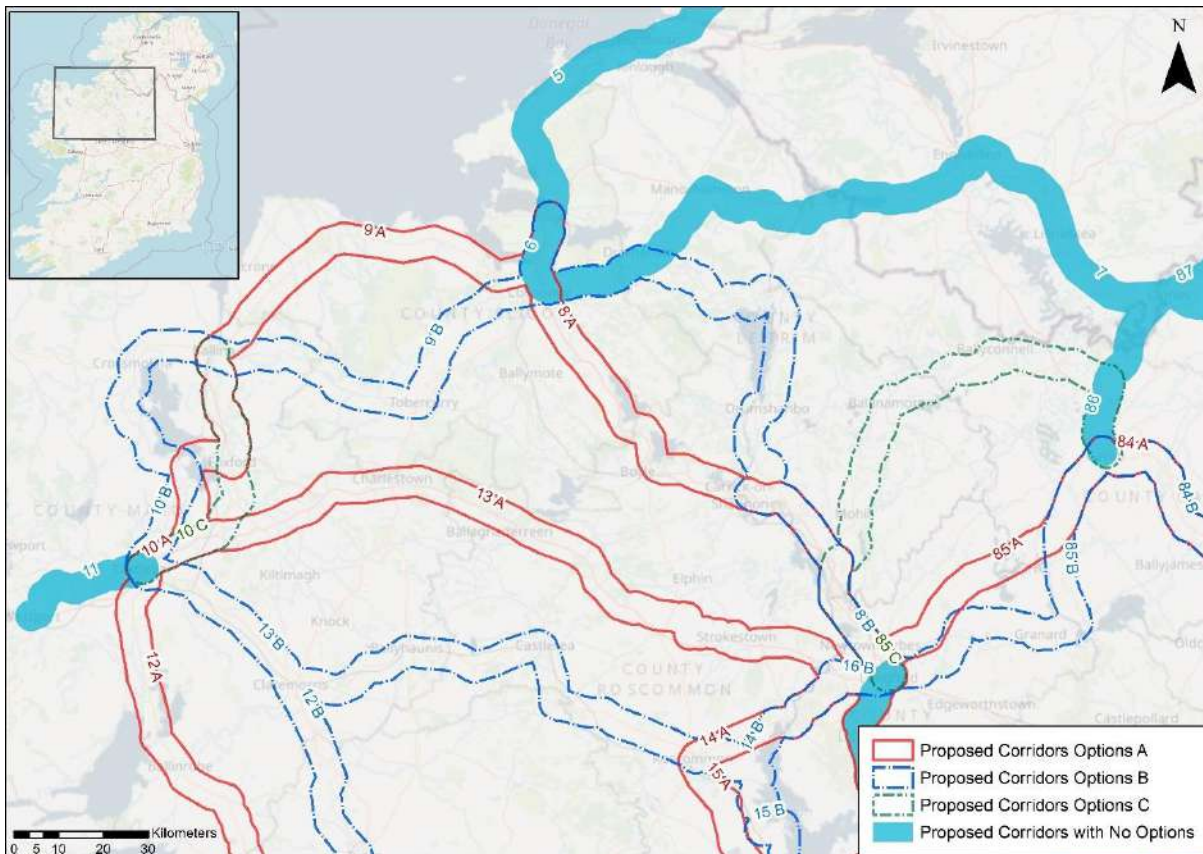


Figure B3: Map of corridor options 9, 10 and 11

Table 9. Appraisal Relating to Corridor 9 Sligo to Ballina

SEA Theme	Summary of the Potential Effects Associated with Corridor 9 Sligo to Ballina	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> In the vicinity of the corridor are approximately eight SACs, two SPAs, and seven pNHA/NHAs, including for example Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and pNHA, Lough Gill SAC and pNHA, Ballysadare Bay SAC, SPA and pNHA, and Killala Bay/Moy Estuary SAC, SPA and pNHA. Option A is located further away from designated sites. These designated sites and key sensitivities associated with the designations would need to be considered when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable.</p> <p><b>Option B:</b> In the vicinity of the corridor are approximately ten SACs, two SPAs, and eight pNHA/NHAs, including for example Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and pNHA, Ballysadare Bay SAC, SPA and pNHA, Ox Mountains Bogs SAC and pNHA, Lough Nabrickkeagh Bog pNHA, Killala Bay/Moy Estuary SAC, SPA and pNHA, and River Moy SAC. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable such as along existing road and cycleway infrastructure where it occurs.</p>	1	2
<b>Population and Human Health</b>	<p>The options would link Sligo (population 19,250) with Ballina (population c.10,170), supporting accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the route and support community vitality.</p> <p>Option B will however also link Sligo and Ballina with Tubbercurry (population c.1,990), bringing additional benefits in relation to this SEA theme.</p>	2	1
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area varies and includes urban fabric (artificial surfaces) in Sligo town, Ballysdare, Dromore West and Ballina and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and peat bogs (wetland) and forests (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	2	1

SEA Theme	Summary of the Potential Effects Associated with Corridor 9 Sligo to Ballina	Option	
		A	B
	<p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes urban fabric (artificial surfaces) in Sligo town, Tubbercurry and Ballina and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and peat bogs (wetland) and forests (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route primarily involve the reallocation of road space / recreational amenity infrastructure, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Option B is the preferred option for land and soils, as it aligns more along existing infrastructure (greenway) and would require less land-take (from agriculture).</p>		
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including Knocknahun River, Barnabrack River, Easky River and the River Brusna and Moy Estuary and Ballysadare Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including Knocknahun River, Owenbeg River, Tubbercurry River, Behy River and the River Brusna and Ballysadare Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Sligo town and Ballina. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option B, through linking additional settlements, will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	2	1
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a house (Reg. No. 32309007), Monumental structure (SL019-006002-), enclosure (SL018-030-), Fulacht fia (MA030-106-), and the quay / wharf (Reg. No. 31204106).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a battlefield (SL020-281-), railway station (Reg. No. 32312004), Railway Station (Reg. No. 32316016) and Upper Bridge (Reg. No. 31204104).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p>Option B is the preferred option for cultural heritage, as it aligns along existing infrastructure (greenway) and would rejuvenation and connect these cultural heritage assets.</p>	2	1
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

Table 10. Appraisal Relating to Corridor 10 Ballina to Castlebar

SEA Theme	Summary of the Potential Effects Associated with Corridor 10 Ballina to Castlebar	Option		
		A	B	C
<b>Biodiversity</b>	<p><b>Option A:</b> The corridor passes through Lough Conn and Lough Cullin SPA and pNHA and the River Moy SAC. The route also passes through the Moy Valley pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable.</p> <p><b>Option B:</b> The corridor encompasses River Moy SAC, Lough Conn and Lough Cullin SPA and pNHA, and Cunnagher More Bog NHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable.</p> <p><b>Option C:</b> The corridor passes through or encompasses River Moy SAC, Killala Bay/Moy Estuary SAC and pNHA, Moy Valley pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable such as along existing road and cycleway/greenway infrastructure.</p>	=	=	=
<b>Population and Human Health</b>	<p><b>Options A, B &amp; C</b> link Ballina (population c.10,170) and Castlebar (population c. 12,070), supporting accessibility to the services and facilities available in these settlements. Due to the broad routes of the options, Options A &amp; C would also enhance accessibility from Foxford (population c.1,315), and Option B would enhance accessibility from Crossmolina (population c.1,044).</p> <p>An enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. All three corridors also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p>	=	=	=
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area varies and includes urban fabric (artificial surfaces) in Ballina, Foxford and Castlebar and areas of pastures (agricultural areas), land principally occupied by agriculture with significant areas of natural vegetation (agricultural areas), peat bogs (wetland), coniferous forests (forest and semi-natural areas), wetland (inland marshes), forest and semi-natural areas (forest and semi-natural areas), forest (broad-leafed) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic railway, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes urban fabric (artificial surfaces) in Ballina, Pootoon and Castlebar and areas of pastures (agricultural areas), land principally occupied by agriculture with significant areas of natural vegetation (agricultural areas), peat bogs (wetland), coniferous forests (forest and semi-natural areas), wetland (inland marshes), forest and semi-natural areas (forest and semi-natural areas), forest (broad-leafed) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic railway, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option C:</b> Land use along the proposed corridor / within the area is variable and includes urban fabric (artificial surfaces) in Ballina and Castlebar and areas of pastures (agricultural areas), land principally occupied by agriculture with significant areas of natural vegetation (agricultural areas), peat bogs (wetland), coniferous forests (forest and semi-natural areas), wetland (inland marshes), forest and semi-natural areas (forest and semi-natural areas), forest (broad-leafed) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Moy, River Crumlin and the Castlebar River and Lough Conn. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Moy, River Deel, River Crumlin and the Castlebar River and Lough Conn. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option C:</b> Several watercourses occur along the route of the proposed corridor, including the River Moy, River Crumlin and the Castlebar River. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 10 Ballina to Castlebar	Option		
		A	B	C
<b>Air Quality</b>	<b>Options A &amp; B &amp; C:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Ballina and Castlebar and passes through Foxford, Pontoon and Turlough. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.	=	=	=
<b>Climate Change</b>	The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.  The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.	=	=	=
<b>Cultural Heritage</b>	<b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as an enclosure (MA039-080----), barracks (MA060-035002-), bridge (Reg. No. 31206002), mill (Reg. No. 31307004), ritual site / holy well (MA078-006002-), and gates / railings / walls (Reg. No. 31209074).  Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor. <b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as an enclosure (MA030-050----), church (MA038-061001-), gates / railings / walls (Reg. No. 31304704), building (Reg. No. 31306003) and a bridge (Reg. No. 31306905).  Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor. <b>Option C:</b> A range of cultural heritage assets are present within the proposed corridor, such as a water pump (Reg. No. 31204097, enclosure (MA039-080----), settlement deserted – medieval (MA060-036001-), enclosure (MA060-048----), bridge (Reg. No. 31307030) and a castle (MA070-183----).  The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.	=	=	=
<b>Landscape</b>	The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.  More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.	=	=	=

**Table 11. Appraisal Relating to Corridor 11 Westport to Castlebar**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 11 Westport to Castlebar</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>The corridor is adjacent to the Dambaduff Lough pNHA near Kilfea, the Clew Bay Complex SAC and pNHA is also located within the surrounding environs of the corridor. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads infrastructure.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Castlebar (population c.12,070) with Westport (population c.6,200), supporting accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the route and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area varies and includes areas of urban fabric (artificial surfaces) and sport and leisure facilities (artificial surfaces) in Castlebar and Westport and areas of land principally occupied by agriculture with significant areas of natural vegetation (agricultural areas) and pastures (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the Castlebar River and the Moyour River and Westport Bay. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Castlebar and Westport. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a Windmill (MA078-010----), enclosure (MA077-020----) and a house (Reg. No. 31212038).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

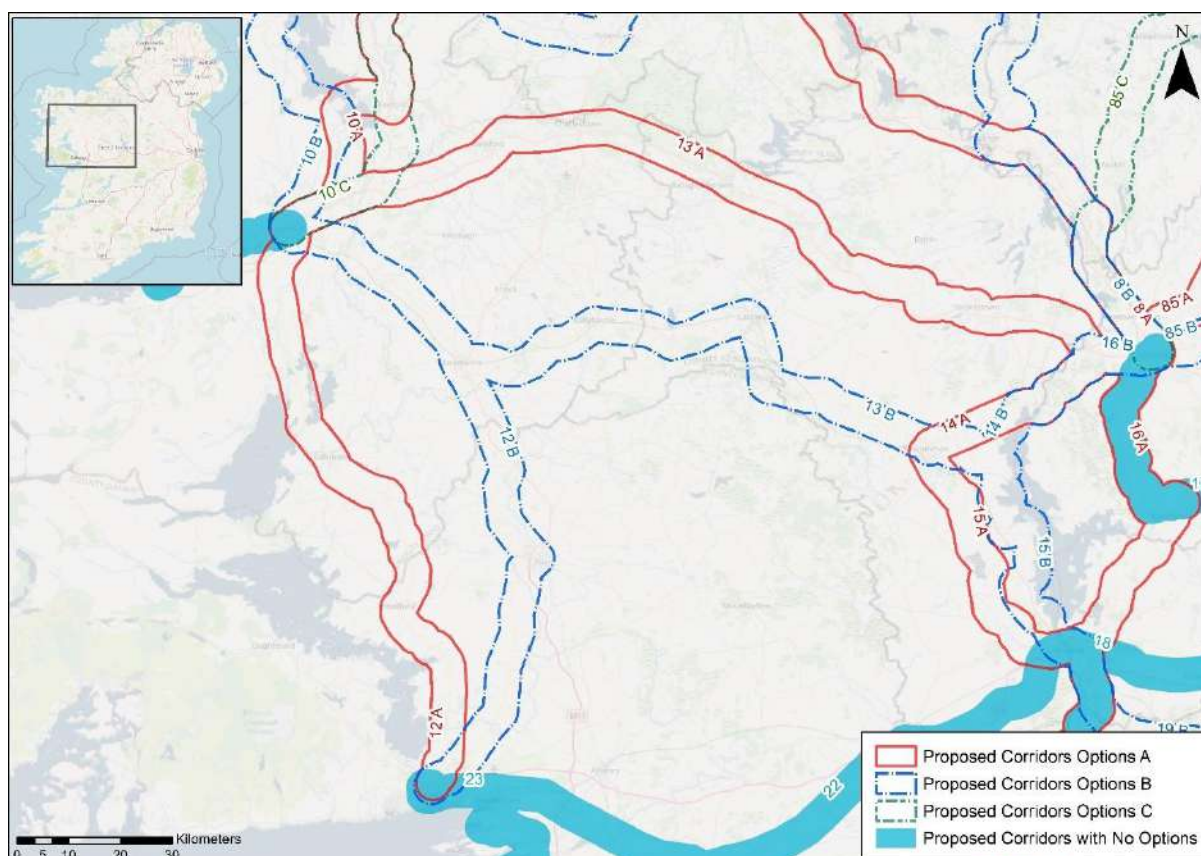


Figure B4: Map of corridor options 12, 13, 14 and 15

Table 12. Appraisal Relating to Corridor 12 Galway to Castlebar

SEA Theme	Summary of the Potential Effects Associated with Corridor 12 Galway to Castlebar	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> In the vicinity of the corridor are approximately six SACs, two SPAs, and eight pNHA/NHA, including for example Lough Corrib SAC, SPA and pNHA, Shrute Turlough SAC and pNHA, Macorha Lough SAC and pNHA, Lough Carra/Mask Complex SAC and pNHA, and Lough Mask SPA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable.</p> <p><b>Option B:</b> The corridor traverses Lough Corrib SAC and pNHA, River Moy SAC, Carrowmore Lough Shore pNHA, Altore Lake pNHA, and Kiltullagh Turlough pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable.</p>	1	2
<b>Population and Human Health</b>	<p>The corridor options would link Castlebar (population c.12,070) with the city of Galway (population c.80,000). Due to the broad routes of the options, Option A would enhance accessibility from Ballinrobe (population c.2,790), and Option B would enhance accessibility from the larger settlement of Tuam (population c. 8,770).</p> <p>In this respect both options would support an enhancement of accessibility by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p> <p>Option B however has the potential to bring additional benefits through linking the larger settlement of Tuam.</p>	1	2

SEA Theme	Summary of the Potential Effects Associated with Corridor 12 Galway to Castlebar	Option	
		A	B
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area varies and includes urban fabric (artificial surfaces) in Castlebar, Headford and Galway City and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), peat bogs (wetland), forests (forest and semi-natural areas), mineral extraction sites and wetlands (inland marshes) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes urban fabric (artificial surfaces) in Castlebar, Claremorris, Tuam, Claregalway and Galway City and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), peat bogs (wetland), forests (forest and semi-natural areas) and wetlands (inland marshes) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / railway, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Option B is the preferred option for land and soils, as it aligns more along existing infrastructure (greenway) and would require less land-take (from agriculture).</p>	2	1
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Castlebar River, Claureen River, Robe River, Gregg River and the River Clare. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the Robe River and River Clare (Galway). The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Castlebar and Galway City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option A, through linking the larger settlement of Tuam, will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	1	2
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a ringfort (MA078-040----), handball ally (Reg. No. 31308915), ringfort (MA089-053----), thatch house (Reg. No. 30404214) and castle tower (GA082-002----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Options B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a ringfort (MA078-031001-), Fulacht fia (MA079-109----), footbridge (Reg. No. 31214018), church (GA016-097----) and a ringfort (GA082-074----).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p>Option B is the preferred option for cultural heritage, as it aligns along existing infrastructure (greenway) and would rejuvenation and connect these cultural heritage assets.</p>	2	1
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=



Table 13. Appraisal Relating to Corridor 13 Castlebar to Longford (via N60)

SEA Theme	Summary of the Potential Effects Associated with Corridor 13 Castlebar to Longford	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> In the vicinity of the corridor are approximately eight SACs, three SPAs, and 15 pNHA/NHAs, including for example River Moy SAC, Tullaghanrock Bog SAC and pNHA, Cloonshanville Bog SAC and pNHA, Bellanagare Bog SAC, SPA and pNHA, Annaghmore Lough (Roscommon) SAC and pNHA, Ballykenney-Fisherstown Bog SPA, Lough Forbes Complex SAC and pNHA, and Brown Bog SAC pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable such as along existing road and cycleways.</p> <p><b>Option B:</b> Within the corridor there are approximately eight SACs, two SPAs, and 11 pNHA/NHA, including for example Carrowmore Lough Shore pNHA, Lough O'Flynn pNHA, Cloonchambers Bog SAC and pNHA, Lough Ree SAC, SPA and pNHA, Corbo Bog SAC and pNHA, Ballykenney-Fisherstown Bog SPA, Lough Forbes Complex SAC and pNHA, Brown Bog SAC and pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable such as along existing road and cycleways.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Castlebar (population c. 12,070) with Longford (population c.10,000). Due to the broad routes of the options, Option A would enhance accessibility from Swinford (population c.1,400), Charlestown-Bellahy (population c.1,030) and Ballaghaderreen (population c. 1,810), and Option B would enhance accessibility from the settlements of Claremorris (population c. 3,690), Ballyhaunis (population c.2,370), Castlerea (population c.1,990), Roscommon (population c.5,880) and Lanesborough-Ballyleague (population c.1,450).</p> <p>In this respect both options would support an enhancement of accessibility by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p> <p>Option B however has the potential to bring additional benefits through linking a larger overall population.</p>	2	1
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area varies and includes urban fabric (artificial surfaces) in Castlebar, Swinford, Tusk and Longford town and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), peat bogs (wetland) and forests (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes urban fabric (artificial surfaces) in Castlebar, Claremorris, Ballyhaunis, Roscommon town and Longford town and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), peat bogs (wetland) and forests (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Castlebar River, Trimoge River, Swinford River, Lung River and the Feorish River. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the Robe River, Suck River, Hind River and the River Shannon. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Castlebar and Longford town. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option B, through linking a larger population, will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	2	1

SEA Theme	Summary of the Potential Effects Associated with Corridor 13 Castlebar to Longford	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a house (Reg. No. 31307007), ringfort (MA070-157----), enclosure (MA071-075----) and a burnt mound MA063-064----) and a bridge (Reg. No. 13401301).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Options B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a souterrain (MA078-031002-), enclosure (MA079-087----), ringfort (MA102-033----), record (MA093-055----), ritual site (MA103-010002-), burnt mound (RO025-033----), ringfort (RO034-026----0), Designed landscape – avenue (RO039-044----) and a bridge (RO037-005----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

Table 14. Appraisal Relating to Corridor 14 Roscommon to Longford

SEA Theme	Summary of the Potential Effects Associated with Corridor 14 Roscommon to Longford	Option	
		A	B
<b>Biodiversity</b>	<p><b>Options A &amp; B:</b> Options A and B are located adjacent to Brown Bog SAC and pNHA, Ballykenny-Fisherstown Bog SPA, Lough Forbes Complex SAC and pNHA, Lough Bannow pNHA, Lough Ree SAC, SPA, and pNHA, and Lisnanarriagh Bog NHA. In addition Option A is located adjacent to Corbo Bog SAC and pNHA. Option B traverses Lough Ree SAC, SPA and pNHA, however it is partially located in an area with an existing cycling trail (Green Heartlands Cycle Route).</p> <p>Option A encroaches a section of Lough Ree SAC, SPA and pNHA but is located further away from the designated site than Option B.</p> <p>These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable such as along existing road and cycleways.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Roscommon (population c.5,880) with Longford (population c.10,000) supporting accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the route and support community vitality.</p> <p>Given Option A would deliver a slightly shorter route between the two settlements, the option may bring additional benefits through enhanced useability.</p>	1	2
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area varies and includes urban fabric (artificial surfaces) in Roscommon town, Ballyleague and Longford town and areas of pastures (agricultural areas), inland marshes (wetland) and peat bogs (wetland) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes urban fabric (artificial surfaces) in Roscommon town, Ballyleague and Longford town and areas of pastures (agricultural areas), inland marshes (wetland) and peat bogs (wetland) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Hind River, Clooneigh River, River Shannon and the Royal Canal. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the Hind River and the River Shannon. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Roscommon town and Longford town. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 14 Roscommon to Longford	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a ringfort (RO040-024----) and bridge (RO040-024----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a Catholic Church (Reg. No. 31940001), ritual site / holy well (RO036-048002-) and a bridge (RO040-024----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

Table 15. Appraisal Relating to Corridor 15 Roscommon to Athlone

SEA Theme	Summary of the Potential Effects Associated with Corridor 15 Roscommon to Athlone	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> The corridor traverses Ballynamona Bog and Corkip Lough SAC, Lough Funshinagh SAC and pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable, such as along existing road infrastructure.</p> <p><b>Option B:</b> The corridor traverses Lough Rea SAC, SPA and pNHA near Cloontogher, Clooncah and Portrunny. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and cycle tracks (for example Green Heartlands Cycle Route).</p>	1	2
<b>Population and Human Health</b>	The corridor options would link Roscommon (population c.5,880) with Athlone (population c.21,350), supporting accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.	=	=
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area varies and includes areas of urban fabric (artificial surfaces) in Roscommon town and Athlone and areas of pastures (agricultural areas), mixed forest (forest and semi-natural areas) and peat bogs (wetland). Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Roscommon town and Athlone and areas of pastures (agricultural areas), peat bogs (wetland) and wetlands (inland marshes) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Hind River, Cross River and the River Shannon. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the Clooneigh River, Hind River and the River Shannon. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Roscommon town and Athlone. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 15 Roscommon to Athlone	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a mill (RO039-069001-), ringfort (RO045-088----), ringfort RO048-031----) and a ritual site / holy well (RO052-024----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a house (Reg. No. 31817006), ritual site (RO042-168002), castle (RO042-045001-) and a curate's house (Reg. No. 31949002).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

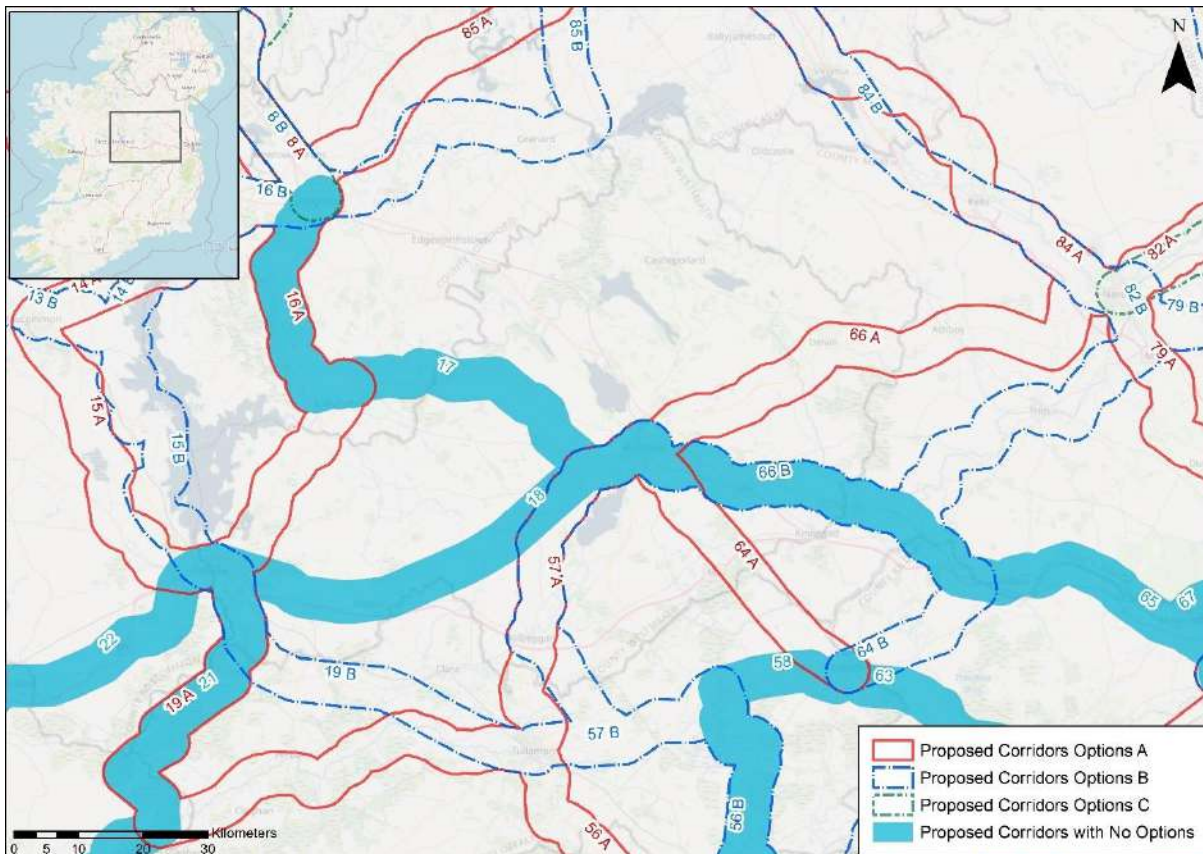


Figure B5: Map of corridor options 16, 17 and 18

Table 16. Appraisal Relating to Corridor 16 Athlone to Longford (west of Lough Ree)

SEA Theme	Summary of the Potential Effects Associated with Corridor 16 Athlone to Longford	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> Option A is adjacent to Crosswood Bog SAC and pNHA, Lough Ree SAC, SPA and pNHA, Waterstown Lake pNHA, Derry Lough pNHA, Royal Canal pNHA, Lough Bawn pNHA, and Mount Jessop Bog SAC and NHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and cycle tracks (for example the Royal Canal Greenway).</p> <p><b>Option B:</b> Option B is runs along and encroaches in some locations the Lough Ree SAC, SPA and pNHA along a planned greenway (Lough Ree Greenway - Athlone to Ballyleague/Lanesborough). Option B is also adjacent to Brown Bog SAC and pNHA, Ballykenny-Fisherstown Bog SPA, Lough Forbes Complex SAC and pNHA, Royal Canal pNHA, Lough Bannow pNHA, Lisnanarriagh Bog NHA, and Corbo Bog SAC and pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Longford (population c. 10,000) with Athlone (population c.21,350) supporting accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p> <p>Option A will also link Ballymahon (population c.1,880), whilst Option B will also link Lanesborough-Ballyleague (population c.1,450).</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 16 Athlone to Longford	Option	
		A	B
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area varies and includes areas of urban fabric (artificial surfaces) in Athlone, Ballymahon and Longford town and areas of pastures (agricultural areas), peat bogs (wetland) and wetlands (inland marshes) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational amenity infrastructure, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Athlone and Longford town and areas of pastures (agricultural areas), peat bogs (wetland) and wetlands (inland marshes) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact is likely to be significant / uncertain.</p> <p>Option A is the preferred option for land and soils, as it aligns more along existing infrastructure (greenway / canal) and would require less land-take (from agriculture).</p>	1	2
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Breensford River, River Inny, River Fallan, Camlin River and the Royal Canal. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Shannon, Clooneigh River, Hind River and the Camlin River. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Athlone and Longford town. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a gate lodge (Reg. No. 13002328), redundant record (LF013-063---), bridge (Reg. No. 13401816), lock (Reg. No. 13401818) and a dock (Reg. No. 13313021).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of the Royal Canal and other cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a Fulacht fia (LF013-150---), bridge (Reg. No. 13307013) and a lock (Reg. No. 13307025), ford (RO037-009---).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p>Option A is the preferred option for cultural heritage, as it aligns along existing infrastructure (greenway / canal) and would rejuvenation and connect these cultural heritage assets.</p>	1	2
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=



**Table 17. Appraisal Relating to Corridor 17 Longford to Mullingar**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 17 Longford to Mullingar</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>The corridor follows the Royal Canal pNHA. In addition, Mount Jessop Bog SAC and NHA, Lough Ennell SAC, SPA and pNHA, Lough Bawn pNHA, and Derry Lough pNHA are located within the corridor. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and cycle tracks (for example the Kildare-Longford Royal Canal Greenway, which runs adjacent to the corridor).</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Longford (population c.10,000) with Mullingar (population c.20,928) supporting accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the routes and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Longford town and Mullingar town and areas of pastures (agricultural areas), mixed forest (forest and semi-natural areas), peat bogs (wetland) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational amenity infrastructure, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Shannon, Clooneigh River, Hind River and the Camlin River, Inny River and the Royal Canal. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Longford town and Mullingar town. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a gate lodge (Reg. No. 13002328), bridge (Reg. No. 13401816), ringfort (LF023-109001-), aqueduct (Reg. No. 13402337) and a bridge (Reg. No. 15401819).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of the Royal Canal and other cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 18. Appraisal Relating to Corridor 18 Athlone to Mullingar**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 18 Athlone to Mullingar</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>A number of designated sites are located in the vicinity of the corridor, this includes approximately five SACs, three SPAs and eight pNHA/NHAs. This includes Lough Ree SAC, SPA and pNHA, River Shannon Callows SAC, SPA and pNHA, Crosswood Bog SAC and pNHA, and Lough Ennell SAC, SPA and pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and cycle tracks (for example the Old Rail Trail Greenway and the EuroVelo 2 route which run adjacent to the corridor).</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor options would link Athlone (population c.21,350) with Mullingar (population c.20,928) supporting accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the route and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces / rail corridor) and industrial or commercial units (artificial surfaces / rail corridor) in Athlone, Moate and Mullingar town and areas of pastures (agricultural areas), forest (broad-leaved) and peat bogs (wetland) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational amenity infrastructure, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Shannon, Cloonbonny Stream, River Brosna and the Royal Canal. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor range from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Athlone and Mullingar town. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a burial ground (WM029-023----), bridge (Reg. No. 15402909), ringfort (WM030-100----), footbridge (Reg. No. 15317036) and a castle (WM025-099----).</p> <p>Given part of the proposed corridor is located along a railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage (archaeological) assets which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

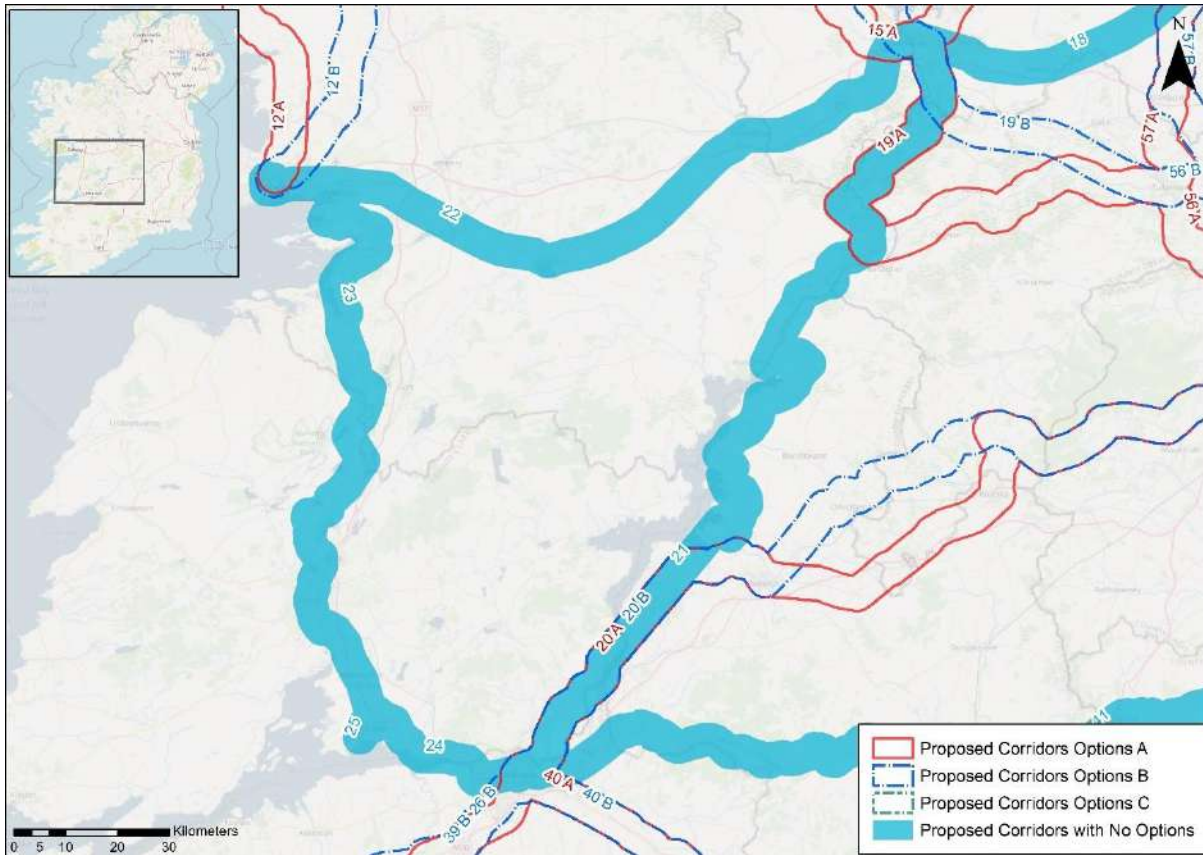


Figure B6: Map of corridor options 19, 20, 21, 22, 23, 24 and 25

Table 19. Appraisal Relating to Corridor 19 Athlone to Tullamore (via Royal Canal)

SEA Theme	Summary of the Potential Effects Associated with Corridor 19 Athlone to Tullamore	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> Option A runs alongside and crosses the River Shannon Callows SAC and pNHA, and Middle Shannon Callows SPA before continuing along the Grand Canal pNHA. There are four SACs, three SPAs and 12 pNHA/NHAs in the vicinity of the corridor including for example Crosswood Bog SAC and pNHA, River Shannon Callows SAC and pNHA, Middle Shannon Callows SPA, Grand Canal pNHA, Grand Canal pNHA, River Suck Callows SPA, Fin Lough (Offaly) SAC and pNHA, Mongan Bog SPA and pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable, such as along existing cycle tracks such as the Grad Canal Greenway.</p> <p><b>Option B:</b> A number of designated sites are located within the corridor, this includes three SACs, one SPA and eight pNHA/NHA. This includes Crosswood Bog SAC and pNHA, River Shannon Callows SAC and pNHA, Middle Shannon Callows SPA, Clonydonnig Bog NHA, Doon Esker Wood pNHA, Clara Bog SAC and pNHA and Grand Canal pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Athlone (population c.21,350) with Tullamore (population c.14,600) supporting accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 19 Athlone to Tullamore	Option	
		A	B
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area varies and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Athlone and Tullamore and areas of pastures (agricultural areas) and peat bogs (wetland) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational amenity infrastructure, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Athlone and Tullamore and areas of pastures (agricultural areas) and peat bogs (wetland) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational amenity infrastructure, loss of land and loss of productive agricultural land is unlikely to be significant. Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p> <p>Option A is the preferred option for land and soils, as it aligns more along existing infrastructure (greenway / canal) and would require less land-take (from agriculture).</p>	1	2
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Shannon, River Blackwater, Clodagh River, River Brosna, Tullamore River and the Grand Canal. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Shannon, River Boor, River Brosna and the Grand Canal. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Athlone and Tullamore. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a school (Reg. No. 15008008), road (WM035-014----), rail (Reg. No. 15403513), canal (GA101-007----), canal (GA109-054----) and bridge (Reg. No. 14914006).</p> <p>Given part of the proposed corridor is located along a railway line (within the peatlands), sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this area. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage (archaeological) assets which may occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 15010122), rail (Reg. No. 15403513), structure (OF006-101----), bawn (OF006-032003-), and a bridge (Reg. No. 14801009).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p>Option A is the preferred option for cultural heritage, as it aligns along existing infrastructure (greenway / canal) and would rejuvenation and connect these cultural heritage assets along the Grand Canal.</p>	1	2
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

Table 20. Appraisal Relating to Corridor 20 Limerick to Portlaoise

SEA Theme	Summary of the Potential Effects Associated with Corridor 20 Limerick to Portlaoise	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A and Option B:</b> Option A and B traverse along the edge of the Slieve Bloom Mountains before separating into distinct options near Killeen, the options re-join near Nenagh. A number of designated sites are common to both Option A and B, these include the Ridge of Portlaoise pNHA, Slieve Bloom Mountains SAC SPA and pNHA, River Barrow and River Nore SAC, Lough Derg pNHA, Lough Derg (Shannon) SPA, Slieve Bernagh Bog SAC, and Lower River Shannon SAC. There are approximately four SACs, two SPAs and six pNHA/NHAs in the vicinity of corridor option A and six SACs, two SPAs and seven pNHA/NHAs within corridor option B. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Limerick (population c. 94,200) with Portlaoise (population c.22,050) via Killaloe (population c.1,480), Ballina (population c.2,630) and Nenagh (population c.8,970). Option A would also link Roscrea (population c. 5,450).</p> <p>In this respect both corridor options would support an enhancement of accessibility by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p> <p>Option A however has the potential to bring additional benefits in relation to this SEA theme through also linking the settlement of Roscrea.</p>	1	2
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area varies and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Limerick, Nenagh, Moneygall, Roscrea and Portlaoise and areas of pastures (agricultural areas), peat bogs (wetland) and mixed forest (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Limerick City, Killaloe, Nenagh and Portlaoise and areas of pastures (agricultural areas), peat bogs (wetland) and mixed forest (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Lough Derg, Nenagh River, Little Brosna River, Bunnow River, River Delour, River Mountrath, River Blackwater and the Shannon Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Shannon, Lough Derg, Nenagh River, Gortadalaun Stream, Ballyfinboy River, Little Brosna River, Clareen Stream, River Delour, River Mountrath and the River Blackwater and the Shannon Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Limerick, Nenagh and Portlaoise. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option A, through linking Roscrea, will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	1	2

SEA Theme	Summary of the Potential Effects Associated with Corridor 20 Limerick to Portlaoise	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a house / store (Reg. No. 21513048), enclosure (CL063-015----), Sheela-na-gig (CL053-038---), and a ford (TN014-057005-).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a house / store (Reg. No. 21513048), enclosure (CL063-015----), church (Reg. No. 22401503) and an enclosure (OF039-048----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes. More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

**Table 21. Appraisal Relating to Corridor 21 Limerick to Athlone**

SEA Theme	Summary of the Potential Effects Associated with Corridor 21 Limerick to Athlone	Impact
<b>Biodiversity</b>	<p>A of designated sites occur in the vicinity of the corridor, including approximately nine SACs, five SPAs and 16 pNHA/NHAs. This includes for example Crosswood Bog SAC pNHA, River Shannon Callows SAC, SPA, pNHA, Mongan Bog SAC, SPA, pNHA, River Suck Callows SPA NHA and Lough Derg (Shannon) SPA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and cycle tracks.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Athlone (population c.21,350) with Limerick (population c.94,200) via Killaloe (population c.1,480), Ballina (population c.2,630) and Portumna (population c.1,450), supporting accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the route and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area varies and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Athlone and Limerick City and areas of pastures (agricultural areas), waterbodies, wetland (inland marshes) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational amenity infrastructure, loss of land and loss of productive agricultural land is unlikely to be significant. Should the route require some land-take (from agriculture), the impact is likely to be significant / uncertain.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Shannon and Estuary, Lough Derg and the River Blackwater. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Athlone and Limerick City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a house / store (Reg. No. 21513048), church (TN014-004003-), Ecclesiastical site (TN006-003001-), bridge (Reg. No. 30412706) and castle (GA109-021--).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 22. Appraisal Relating to Corridor 22 Galway to Athlone**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 22 Galway to Athlone</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>A number of designated sites occur within the surround environs, including approximately six SACs, five SPAs and 10 pNHA/NHAs. This includes the River Shannon Callows SAC pNHA, Suck River Callows SPA and NHA, and the Lough Rea SAC, SPA, pNHA and Rahasane Turlough SAC, SPA, pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Athlone (population c.21,350) with the city of Galway (population c.79,950) via Loughrea (population c.5,560) and Ballinasloe (population c.6,660), supporting accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the route and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Galway City, Loughrea, Ballinasloe and Athlone and areas of pastures (agricultural areas), peat bogs (wetland) and forest (broad-leafed) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Clarinbridge, River Kilcolgan, Lecarrow Stream, Ballinure River, River Suck, Cross River. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Galway City and Athlone. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a castle (GA082-080001-), boundary stone (GA094-030001-), house (Reg. No. 30336006) and an Architectural fragment (GA105-234----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>



**Table 23. Appraisal Relating to Corridor 23 Galway to Ennis**

SEA Theme	Summary of the Potential Effects Associated with Corridor 23 Galway to Ennis	Impact
<b>Biodiversity</b>	<p>A number of designated sites occur within the surrounding environs, including approximately 12 SACs, 3 SPAs and 12 pNHA/NHAs. This includes the Galway Bay Complex SAC and pNHA, Coole-Garryland Complex SAC, SPA and pNHA, Ballyallia Lough SPA, and Lower River Shannon SAC. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and cycle tracks.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link the city of Galway (population c.79,950) with Ennis (population c.25,275) via Oranmore (population c.4,990), supporting accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the route and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Galway City and Ennis and areas of pastures (agricultural areas), forest (broad-leafed), land principally occupied by agriculture with significant areas of natural vegetation (agricultural areas) and bare rock (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require land-take from (agriculture) land, the impact to likely to be significant / uncertain.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Corrib and Estuary, Rockhill River, Kilcolgan River, Castlodge River, Moyree River, River Fergus and Estuary and the River Shannon and Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Galway City and Ennis. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a castle (GA082-080001-), church (GA095-114----), church (GA095-051----) and a bridge (Reg. No. 30410330) and a Promontory fort – coastal (GA113-123----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 24. Appraisal Relating to Corridor 24 Ennis to Limerick**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 24 Ennis to Limerick</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>A number of designated sites occur in the vicinity of the corridor, including three SACs, one SPA and seven pNHA/NHA. These include the Lower River Shannon SAC, the Newhall and Edenvale Complex SAC and pNHA, the River Shannon and River Fergus Estuaries SPA, and the Fergus Estuary and Inner Shannon, North Shore pNHA, Lough Gash Turlough SAC and pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and cycle tracks.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Ennis (population c.25,275) with Limerick (population c.94,200) via Newmarket-On-Fergus (population c.1,785) and Shannon (population c.9,730), supporting accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the route and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area varies and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Ennis, Shannon, Bunratty and Limerick City and areas of pastures (agricultural areas), road and rail network (artificial surfaces), wetland (inland marshes), land principally occupied by agriculture with significant areas of natural vegetation (agricultural areas) and estuaries (waterbodies) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take from (agriculture) land, the impact is likely to be significant / uncertain.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Fergus, Owenogarney River and the River Shannon. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Ennis and Limerick City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a church (Reg. No. 20000019), Castle - Anglo-Norman masonry castle (CL041-089----), bridge (Reg. No. 20404204), ringfort (CL051-088----) and a jetty (CL062-048----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 25. Appraisal Relating to Corridor 25 Shannon to Ennis / Limerick**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 25 Shannon to Ennis / Limerick</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>The Lower River Shannon SAC, River Shannon and River Fergus Estuaries SPA, and Fergus Estuary and Inner Shannon, North Shore pNHA are all located in the vicinity of the corridor. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and cycle tracks (for example existing TII infrastructure where practicable).</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Shannon (population c.9,730) with Ennis (population c.25,275), Limerick (population c.94,200) and Newmarket-On-Fergus (population c.1,785), supporting accessibility to the services, facilities and amenities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the route and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Shannon as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>A watercourse occurs along the route of the proposed corridor, including the Urlan Beg Stream. The status of this watercourse is 'unassigned' and 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route in Shannon. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as enclosures (CL051-176006-) and (CL051-144----) and (CL051-138----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

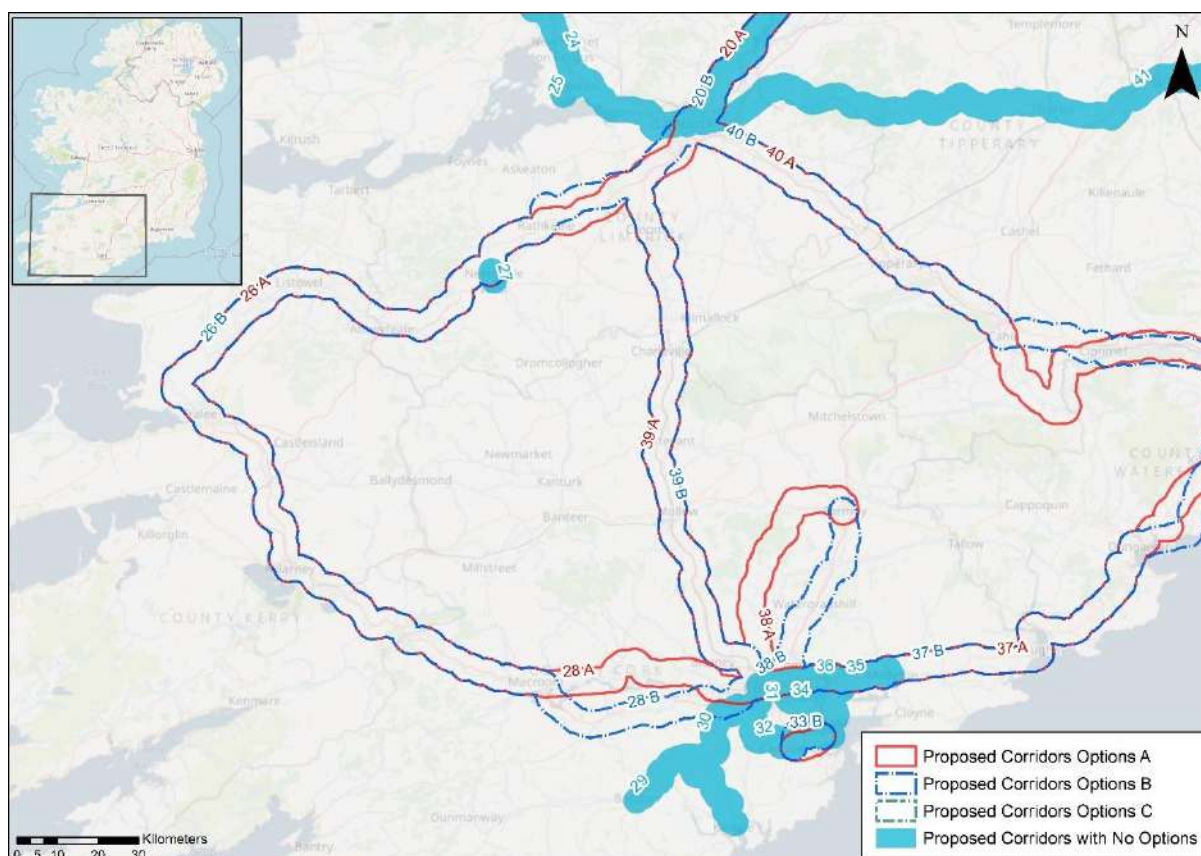


Figure B7: Map of corridor options 26, 27 and 28

Table 26. Appraisal Relating to Corridor 26 Tralee to Limerick

SEA Theme	Summary of the Potential Effects Associated with Corridor 26 Tralee to Limerick	Option	
		A	B
<b>Biodiversity</b>	<p><b>Options A &amp; B:</b> Option A and B flow a similar route with the exception of a small divergence near Limerick. The designated sites identified in the vicinity of the corridor options are Inner Shannon Estuary - South Shore pNHA, Loughmore Common Turlough pNHA, Lower River Shannon SAC, Adare Woodlands pNHA, Askeaton Fen Complex SAC, Cappagh Fen pNHA, Ballymorrisheen Marsh pNHA, Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA, Lower River Shannon SAC, and Moanveanlagh Bog SAC and pNHA. All designated sites are common to both options. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and cycle tracks (for example the Great Southern Trail - Listowel to Limerick Border).</p>	=	=
<b>Population and Human Health</b>	<p>Both of the corridor options would link Limerick (population c. 94,200) with Tralee (population c.23,700) via Adare (population c.1,130), Rathkeale (population c.1,440), Newcastle West (population c. 6,620), Abbeyfeale (population c. 2,020) and Listowel (population c.4,820).</p> <p>In this respect both corridor options would support an enhancement of accessibility by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p>	=	=
<b>Land and Soils</b>	<p><b>Options A &amp; B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Tralee, Listowel and Limerick City and areas of pastures (agricultural areas) and peat bogs (wetland) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=
<b>Water</b>	<p><b>Options A &amp; B:</b> Several watercourses occur along the route of the proposed corridor, including the Barnakyle River, River Maigue, River Deel, River Allaghaun, River Feale and the River Lee (Tralee). The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 26 Tralee to Limerick	Option	
		A	B
<b>Air Quality</b>	<b>Options A &amp; B:</b> The corridor options occur in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Tralee and Limerick City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.	=	=
<b>Climate Change</b>	The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport. The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.	=	=
<b>Cultural Heritage</b>	<b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a ringfort (KE021-114----), church (Reg. No. 21302101), ringfort (KE015-088----), enclosure (KE011-016----), ringfort (LI042-006----), railway station (Reg. No. 21831013) and Fulacht fia (LI020-174----) and a gate lodge (No. 21902113). Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor. <b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a ringfort (KE021-114----), church (Reg. No. 21302101), ringfort (KE015-088----), enclosure (KE011-016----), ringfort (LI042-006----), railway station (Reg. No. 21831013) and (Reg. No. 21902016), bridge (Reg. No. 21902032) and a bridge (LI013-012----). Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor. Option B is the preferred option for cultural heritage, as it aligns along existing infrastructure (a railway line) and would rejuvenation and connect cultural heritage assets along the route.	2	1
<b>Landscape</b>	The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes. More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.	=	=

**Table 27. Appraisal Relating to Corridor 27 Newcastle West to Tralee / Limerick**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 27 Newcastle West to Tralee / Limerick</b>	<b>Impact</b>
<b>Biodiversity</b>	No designated sites are located in the vicinity of the route. The corridor is located within a built-up area of hardstanding made up of residential and industrial areas with intermittent sections of agricultural land. Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable.	<b>Neutral</b>
<b>Population and Human Health</b>	The corridor would link Newcastle West (population c.6,620) with Limerick (population c. 94,200) and Tralee (population c.23,700) via Adare (population c.1,130), Rathkeale (population c.1,440), Abbeyfeale (population c.2,020) and Listowel (population c.4,820). In this respect the corridor would support an enhancement of accessibility by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The options also have the potential to bring benefits for the visitor economy along the corridor and support community vitality.	<b>Positive</b>
<b>Land and Soil</b>	Land use along the proposed corridor is an area of urban fabric (artificial surfaces) in Newcastle West as per CORINE 2018. Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.	<b>Positive</b>
<b>Water</b>	There are no watercourses along the route of the proposed corridor.	<b>Neutral</b>
<b>Air Quality</b>	The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route in Newcastle West. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.	<b>Positive</b>
<b>Climate Change</b>	The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport. The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.	<b>Positive</b>
<b>Cultural Heritage</b>	A number of cultural heritage assets are present within the proposed corridor, such as a ringfort (LI036-075----) and railings / gate (Reg. No. 21837050). Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.	<b>Uncertain</b>
<b>Landscape</b>	The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes. More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.	<b>Positive</b>

Table 28. Appraisal Relating to Corridor 28 Cork to Tralee (south of N22)

SEA Theme	Summary of the Potential Effects Associated with Corridor 28 Cork to Tralee	Option	
		A	B
<b>Biodiversity</b>	<p><b>Options A &amp; B:</b> Option A and B follow a similar route, with the exception of a divergence from Cork to Ummera. Option A traverses approximately eight SACs, four SPAs, and 15 pNHA/NHAs, while Option B traverses approximately eight SACs, four SPAs, and 11 pNHA/NHAs. Designated sites common to both include for example the Gearagh SAC, SPA and pNHA, the Mullaghanish to Musheramore Mountains SPA, Killarney National Park, the Macgillycuddy's Reeks and Caragh River Catchment SAC and pNHA, Killarney National Park SPA, Ballyseedy Wood SAC, the Tralee Bay and Magharees Peninsula, West to Cloghane SAC and pNHA, and the Tralee Bay Complex SPA.</p> <p>These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the routes would utilise existing infrastructure where practicable, such as along existing roads and cycleways (such as the Lee to Sea greenway).</p>	2	1
<b>Population and Human Health</b>	<p>The corridor options would link the city of Cork (population c.208,670) with Tralee (population c.23,700) via Killarney (population c. 14,500) and Macroom (population c.3,765). Option A will also link Tower (population c.3,420), whilst Option B will also link Killumney (population c.1,130).</p> <p>This will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p>	=	=
<b>Land and Soil</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area varies and includes areas of urban fabric (artificial surfaces) in Tralee, Kilarney, Macroom and Cork City and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), peat bogs (wetland), mixed forest (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Tralee, Kilarney, Macroom and Cork City and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), peat bogs (wetland), mixed forest (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Option B is the preferred option for land and soils, as it aligns more along existing infrastructure (railway line) and would require less land-take (from agriculture).</p>	2	1
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Lee (Tralee), River Maine, River Flesk, River Sullane, River Lee and Estuary and River Laney and Lough Carrigdrohid. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Lee (Tralee), River Maine, River Flesk, River Sullane, River Lee and Estuary, River Bride and the River Curragheen and Lough Carrigdrohid. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Tralee and Cork City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 28 Cork to Tralee	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as enclosures (KE038-015----) and (KE038-119----) and (KE038-117----), fulacht fia (KE039-210----), ringforts (KE039-040----) and (KE066-039----), standing stone (KE067-032----) and a fulacht fia (CO072-035----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as enclosures (KE038-015----) and (KE038-119----) and (KE038-117----), fulacht fia (KE039-210----), ringforts (KE039-040----) and (KE066-039----), gate lodge (Reg. No. 20907107), monument (Reg. No. 20908319), castle (CO084-022001-) and a souterrain (CO084-026003-).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p>Option B is the preferred option for cultural heritage, as it aligns along existing infrastructure (historic railway line) and would rejuvenation and connect the cultural heritage assets along this route.</p>	2	1
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=



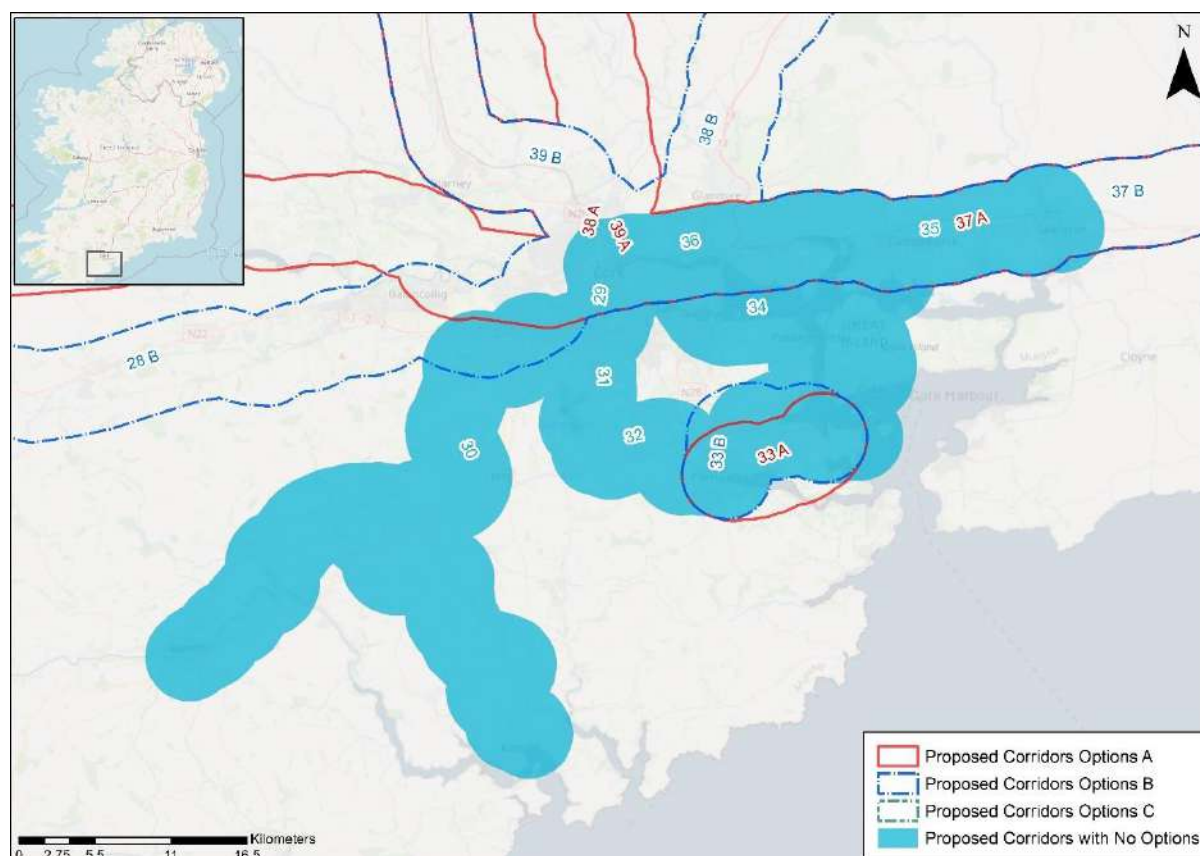


Figure B8: Map of corridor options 29, 30, 31, 32, 33, 34 and 36 (see Figure B9 for option 35)

Table 29. Appraisal Relating to Corridor 29 Cork to Bandon

SEA Theme	Summary of the Potential Effects Associated with Corridor 29 Cork to Bandon	Impact
<b>Biodiversity</b>	<p>The Cork Harbour SPA, Cork Lough pNHA, the Douglas River Estuary pNHA, the Bandon Valley above Inishannon pNHA and the Bandon Valley West of Bandon pNHA are all located in the vicinity of the corridor. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and historic railways.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link the city of Cork (population c.208,670) with Bandon (population c.6,960). In this respect the corridor would support an enhancement of accessibility by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The option also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area varies and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Bandon and Cork City and areas of pastures (agricultural areas), mixed forest (forest and semi-natural areas), land principally occupied by agriculture with significant areas of natural vegetation (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Positive</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Bandon, River Owenboy, River Moneygurney and the River Lee and Lee Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Bandon and Cork City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p>	<b>Positive</b>

SEA Theme	Summary of the Potential Effects Associated with Corridor 29 Cork to Bandon	Impact
	<p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a gasworks (CO110-025002-), tunnels (Reg. No. 20911041) and (Reg. No. 20909645), ringfort (CO096-059----), bridge (Reg. No. 20909709) and a viaduct (Reg. No. 20909728). Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 30. Appraisal Relating to Corridor 30 Cork to Kinsale**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 30 Cork to Kinsale</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>The Cork Lough pNHA, the Douglas River Estuary pNHA, the Cork Harbour SPA and the James Fort pNHA are all located in the vicinity of the corridor, however the James Fort pNHA is separated from the corridor by the River Bandon. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and historic railways.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link the city of Cork (population c.208,670) with Kinsale (population c.5,280). In this respect the corridor would support an enhancement of accessibility by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area varies and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Kinsale and Cork City and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Positive</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Farranamoy, River Owenboy, River Moneygurney and the River Lee. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Kinsale and Cork City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 20911208), bridge (Reg. No. 20909725), country house (CO097-014001-), bridge (Reg. No. 20909709) and a viaduct (Reg. No. 20909728).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 31. Appraisal Relating to Corridor 31 Cork to Cork Airport**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 31 Cork to Cork Airport</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>Cork Lough pNHA, Douglas River Estuary pNHA, and Cork Harbour SPA are all located within the corridor. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and cycle tracks (for example existing TII infrastructure where practicable).</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	The corridor would link the city of Cork (population c.208,670) with Cork Airport. This will support an enhancement of accessibility by active travel modes to this key employment centre, promoting social inclusion. The option also has the potential to bring benefits for the visitor economy and promote sustainable tourism.	<b>Positive</b>
<b>Land and Soils</b>	Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces), sport and leisure facilities (artificial surfaces) and industrial or commercial units (artificial surfaces) in Cork City and Cork Airport as per CORINE 2018. Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.	<b>Uncertain</b>
<b>Water</b>	Several watercourses occur along the route of the proposed corridor, including the River Moneygurney and the River Lee. The status of this watercourse is 'unassigned' and 'under review'.	<b>Uncertain</b>
<b>Air Quality</b>	The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Cork City and Cork Airport. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a railway station (CO074-119001-) and a mass rock (CO086-069----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 32. Appraisal Relating to Corridor 32 Cork Airport to Carrigaline**

SEA Theme	Summary of the Potential Effects Associated with Corridor 32 Cork Airport to Carrigaline	Impact
<b>Biodiversity</b>	The Cork Harbour SPA and Owenboy River pNHA are located in the vicinity of the corridor. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads (for example Kinsale Road and Ballea Road where practicable).	<b>Uncertain</b>
<b>Population and Human Health</b>	The corridor would link Carrigaline (population c. 15,770) with Cork Airport. This will support an enhancement of accessibility by active travel modes to this key employment centre, promoting social inclusion. The option also has the potential to bring benefits for the visitor economy and sustainable tourism.	<b>Positive</b>
<b>Land and Soils</b>	Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and airport (artificial surfaces) in Cork Airport and Carrigaline and areas of pastures (agricultural areas) and forest (broad-leafed) as per CORINE 2018. Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.	<b>Uncertain</b>
<b>Water</b>	The watercourse along the route of the proposed corridor is the River Owenboy. The WFD status of this watercourse is 'moderate' during the 2013-2018 monitoring period. The watercourse is 'at risk'.	<b>Uncertain</b>
<b>Air Quality</b>	The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Cork Airport and Carrigaline. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.	<b>Positive</b>
<b>Climate Change</b>	The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport. The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.	<b>Positive</b>
<b>Cultural Heritage</b>	A range of cultural heritage assets are present within the proposed corridor, such as an outbuilding (Reg. No. 20908614), house (Reg. No. 20908638) and a bridge (Reg. No. 20908641). The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.	<b>Uncertain</b>
<b>Landscape</b>	The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes. More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.	<b>Positive</b>

Table 33. Appraisal Relating to Corridor 33 Port of Cork to Carrigaline

SEA Theme	Summary of the Potential Effects Associated with Corridor 33 Port of Cork to Carrigaline	Option	
		A	B
<b>Biodiversity</b>	<p><b>Options A &amp; B:</b> Both options traverse Cork Harbour SPA, Monkstown Creek pNHA, and Owenboy River pNHA. Option A is also adjacent to Lough Beg (Cork). These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and cycleways (for example the Cork Harbour Greenway).</p>	=	=
<b>Population and Human Health</b>	The corridor options will both link Carrigaline to the Port of Cork. This will support an enhancement of accessibility by active travel modes to this key employment centre, promoting social inclusion. The option also has the potential to bring benefits for the visitor economy and sustainable tourism.	=	=
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Carrigaline and industrial or commercial units (artificial surfaces and seaport) in Cork Port and areas of pastures (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Carrigaline and industrial or commercial units (artificial surfaces and seaport) in Cork Port and areas of pastures (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme as it aligns more along existing infrastructure (historic rail line) and would require less land-take (from agriculture).</p>	2	1
<b>Water</b>	<b>Options A &amp; B:</b> There are no watercourses along the routes of the proposed corridor options.	=	=
<b>Air Quality</b>	<b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Carrigaline and Cork Port. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as an outbuilding (Reg. No. 20987031), house (Reg. No. 20987033) and a church (CO087-051002-).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a curate's house (Reg. No. 20987048), bridge (Reg. No. 20987009) and a church (Reg. No. 20987029).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme, as it aligns along existing infrastructure (railway line) and would rejuvenation and connect cultural heritage assets along this route.</p>	2	1

SEA Theme	Summary of the Potential Effects Associated with Corridor 33 Port of Cork to Carrigaline	Option	
		A	B
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

**Table 34. Appraisal Relating to Corridor 34 Cork to Port of Cork**

SEA Theme	Summary of the Potential Effects Associated with Corridor 34 Cork to Port of Cork	Impact
<b>Biodiversity</b>	<p>The route traverses the Cork Harbour SPA, Monkstown Creek pNHA, Douglas River Estuary pNHA, and is in proximity to Lough Beg (Cork) pNHA, Owenboy River pNHA, Dunkettle Shore pNHA, Glanmire Wood pNHA, Rockfarm Quarry, Little Island pNHA, and Great Island Channel SAC and pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and cycleways (for example the Cork Harbour Greenway)</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link the city of Cork (population c.208,670) with the Port of Cork. This will support an enhancement of accessibility by active travel modes to this key employment centre, promoting social inclusion. The option also has the potential to bring benefits for the visitor economy and support sustainable tourism.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces), industrial or commercial units (artificial surfaces and seaport) in Cork City, Passage West, Monkstown and Cork Port and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018. Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Positive</b>
<b>Water</b>	<p>The watercourses along the route of the proposed corridor are the River Lee and Lough Mahon. The WFD status of the River Lee and Lough Mahon is 'moderate' during the 2013-2018 monitoring period. The watercourse is 'at risk'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Cork City and Cork Port. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a building (Reg. No. 20508016), castle (CO074-049----), bridge (Reg. No. 20868051) and railway bridges (CO074-121----) and (CO074-068----) and a kiln (CO087-026----).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>



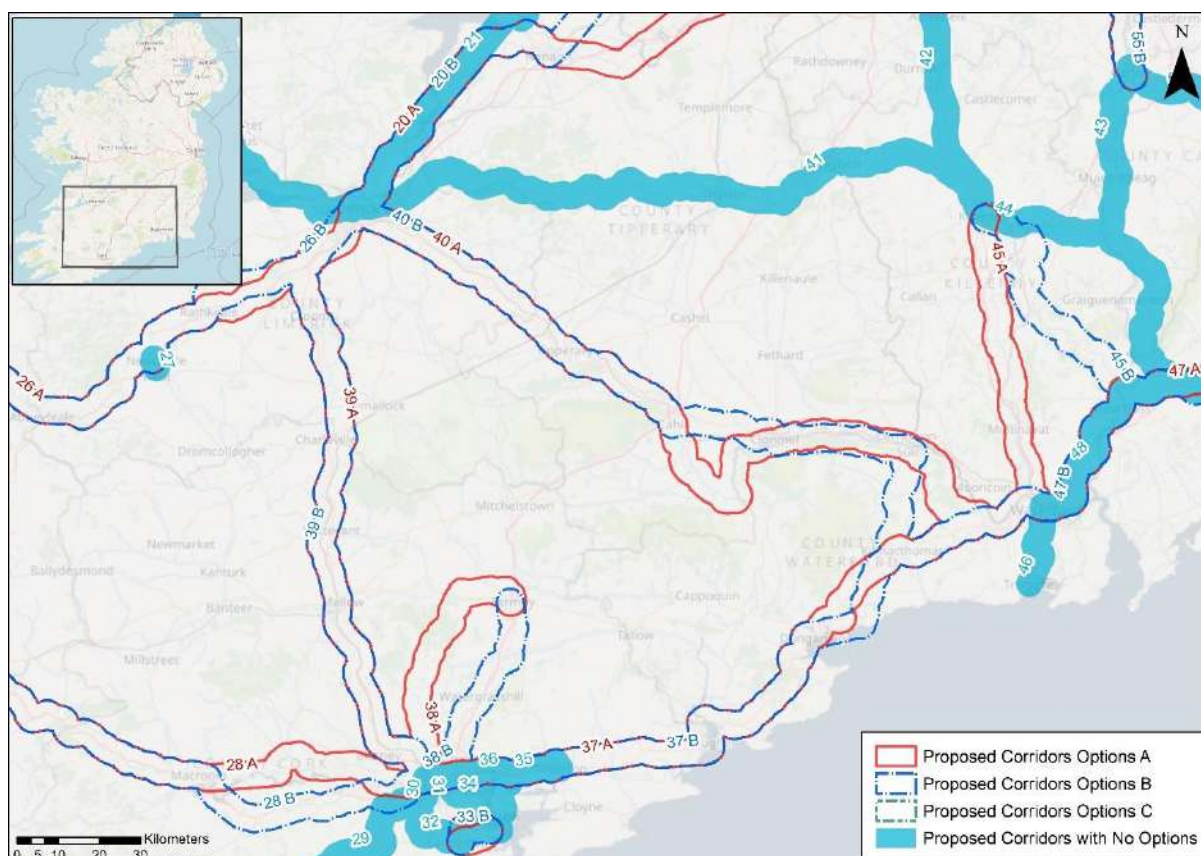


Figure B9: Map of corridor options 35, 36, 37 and 38

Table 35. Appraisal Relating to Corridor 35 Cobh to Midleton

SEA Theme	Summary of the Potential Effects Associated with Corridor 35 Cobh to Midleton	Impact
<b>Biodiversity</b>	<p>The Cork Harbour SPA, Great Island Channel SAC and pNHA, and Cuskinny Marsh, Carrigshane Hill pNHA occur along the potential corridor. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and cycleways (for example EuroVelo 1 if complete).</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Cobh (population c.12,800) with Midleton (population c.12,500) and Carrigwohill (population c.5,080). In this respect the corridor would support an enhancement of accessibility by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces), industrial or commercial units (artificial surfaces) in Cobh, Carrigwohill and Midleton and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas), forest (broad-leafed), intertidal flats (wetlands) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Lee, Tibbotstown Stream and the Owennacurra River. The WFD status of these watercourses ranges between 'moderate' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Cobh and Midleton. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>

SEA Theme	Summary of the Potential Effects Associated with Corridor 35 Cobh to Midleton	Impact
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a church (CO087-010002-), castle (CO075-030----) and a bridge (Reg. No. 20907578).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 36. Appraisal Relating to Corridor 36 Cork to Cobh**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 36 Cork to Cobh</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>The Cork Harbour SPA, Glanmire Wood pNHA, Dunkettle Shore pNHA, Douglas River Estuary pNHA, Rockfarm Quarry Little Island pNHA, Great Island Channel SAC and pNHA, and Cuskinny Marsh pNHA are located in the vicinity of the corridor. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and cycleways.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link the city of Cork (population c.208,670) with Cobh (population c.12,800). In this respect the corridor would support an enhancement of accessibility by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces and seaport) in Cork City, Tivoli Dock, Dunkettle and Cobh and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas), forest (broad-leafed), intertidal flats (wetlands) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Lee, River Glashaboy, Tibbotstown Stream and the Lee Estuary. The WFD status of these watercourses ranges between 'moderate' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Cork City and Cobh. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as the quay (Reg. No. 20506358), church (Reg. No. 20907537) and a bridge (Reg. No. 20907561) and the lodge gate (Reg. No. 20907564).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

Table 37. Appraisal Relating to Corridor 37 Cork to Waterford

SEA Theme	Summary of the Potential Effects Associated with Corridor 37 Cork to Waterford	Option	
		A	B
<b>Biodiversity</b>	<p><b>Options A &amp; B:</b> Both options are similar with the exception of a divergence between the route's course at Faha and Dungarvan. Within both corridors there are approximately five SACs, five SPAs, and thirteen pNHA/NHAs, including for example the Cork Harbour SPA, Great Island Channel SAC and pNHA, Ballymacoda Bay SPA, Ballymacoda (Clonpriest and Pillmore) SAC and pNHA, Blackwater Estuary SPA, Blackwater River (Cork/Waterford) SAC, Dungarvan Harbour SPA and pNHA, and Lower River Suir SAC. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable, such as along existing roads and cycleways.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link the city of Cork (population c.208,670) with the city of Waterford (population c.52,400) via Carrigtwohill (population c.5,080), Middleton (population c.12,500), Youghal (population c.7,975) and Dunvargan (population c.9,230). Option B will also link Ballinroad (population c.1,161).</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p> <p>Given Option B links an additional settlement over the population of 1,000, Option B is slightly better performing in relation to the SEA theme.</p>	2	1
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces and port area) in Cork City, Tivoli Dock, Dunkettle, Carrigtwohill, Middleton, Youghal, Dungarvan and Waterford City and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), forest (broad-leaved), waterbodies, mixed forest (forest and semi-natural areas), complex cultivation patterns (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces and port area) in Cork City, Tivoli Dock, Dunkettle, Carrigtwohill, Middleton, Youghal, Dungarvan and Waterford City and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), forest (broad-leaved), waterbodies, mixed forest (forest and semi-natural areas), complex cultivation patterns (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Lee, Lee Estuary, River Glashaboy, Tibbotstown Stream, Disscour River, River Licky, River Colligan, River Mahon, River Suir and Suir Estuary and Youghal Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Lee, Lee Estuary, River Glashaboy, Tibbotstown Stream, Disscour River, River Licky, River Colligan, River Mahon, River Suir and Suir Estuary and Youghal Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Cork City and Waterford City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option B, through linking an additional settlement, will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	2	1

SEA Theme	Summary of the Potential Effects Associated with Corridor 37 Cork to Waterford	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as the quay (Reg. No. 20506358), church (Reg. No. 20907537), railway station (Reg. No. 20907610), bridge (Reg. No. 20906632), castle (CO067-029008-), standing stone (WA036-031----), ringfort (WA031-019002-), bridges (Reg. No. 22805032) and (Reg. No. 22900802) and a fulacht fia (WA009-032001-).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as the quay (Reg. No. 20506358), church (Reg. No. 20907537), railway station (Reg. No. 20907610), bridge (Reg. No. 20906632) and a castle (CO067-029008-), standing stone (WA036-031----), bridge (Reg. No. 22903116), viaduct (Reg. No. 22903205), tunnel (Reg. No. 22903207) and bridges (Reg. No. 22805032) and (Reg. No. 22900802) and a fulacht fia (WA009-032001-).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

Table 38. Appraisal Relating to Corridor 38 Cork to Fermoy

SEA Theme	Summary of the Potential Effects Associated with Corridor 38 Cork to Fermoy	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> The following designated sites are located in the vicinity of the corridor, Blackwater River (Cork/Waterford) SAC, Bride/Bunaglanna Valley pNHA, Blackwater Valley (Kilcummer) pNHA, Convmore, Ballyhooly (Near Fermoy) pNHA, and Blackwater Valley (Killathy Wood) pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable.</p> <p><b>Option B:</b> The following designated sites are located in the vicinity of the corridor, Glanmire Wood pNHA, Cork Harbour SPA, Blackwater River (Cork/Waterford) SAC, Blackwater Valley (The Beech Wood) pNHA, Blackwater Callows SPA and pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link the city of Cork (population c.208,670) with Fermoy (population c.6,585). Option B will also link Watergrasshill (population c.1,350) and Rathcormac (population c.1,762).</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p>	2	1
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces and port area) in Cork City and Fermoy and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and forest (broad-leafed) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces and port area) in Cork City, Watergrasshill, Rathcormac and Fermoy and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and forest (broad-leafed) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Glennamought, River Glashaboy, River Bride (Blackwater), Lee Estuary, and the River Blackwater. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Glashaboy, River Flesk (Bride), River Bride (Blackwater) and the River Blackwater. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Cork City and Fermoy. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option B, through linking two additional settlements, will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 38 Cork to Fermoy	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as the distillery (CO074-116----), bridges (Reg. No. 20858008) and (Reg. No. 20905211) and a castle (CO034-048----).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a lodge gate (Reg. No. 20860002), ringfort (CO064-004001-), castle (CO053-052----) and a country house (Reg. No. 20904408).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=



Figure B10: Map of corridor options 39 and 40

Table 39. Appraisal Relating to Corridor 39 Cork to Limerick (west of M7)

SEA Theme	Summary of the Potential Effects Associated with Corridor 39 Cork to Limerick	Option	
		A	B
<b>Biodiversity</b>	<p><b>Options A &amp; B:</b> Options A and B traverse a similar route with the exception of a divergence between Ballycarrane and Limerick. The following designated sites are similar to both options: Blarney Bog pNHA, Blarney Castle Woods pNHA, Ardamadane Wood pNHA, Blackwater River (Cork/Waterford) SAC, Tory Hill SAC and pNHA, Adare Woodlands pNHA, Loughmore Common Turlough pNHA, Inner Shannon Estuary - South Shore pNHA, River Shannon and River Fergus Estuaries SPA, and Lower River Shannon SAC. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link the city of Cork (population c.208,670) with Limerick (population c.94,200) via Blarney population c.2,540), Mallow (population c.12,460), Rathluirc (Charleville) (population c.3,920) and Croom (population c.1,160).</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p>	=	=
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Limerick City, Mallow and Cork City and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Limerick City, Mallow and Cork City and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=
<b>Water</b>	<p><b>Options A &amp; B:</b> Several watercourses occur along the route of the proposed corridor, including the River Mague, River Loobagh, River Awbeg, River Blackwater, River Martin, River Blarney and River Bride (Blackwater). The WFD status of these watercourses ranges between 'good'</p>	=	=



SEA Theme	Summary of the Potential Effects Associated with Corridor 39 Cork to Limerick	Option	
		A	B
	and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.		
<b>Air Quality</b>	<b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Limerick City and Cork City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.	=	=
<b>Climate Change</b>	The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport. The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.	=	=
<b>Cultural Heritage</b>	<b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a burnt mound (LI013-170----), bridge (Reg. No. 21901241), burial ground (LI021-020----), bridges (Reg. No. 21902134) and (Reg. No. 21903107) and (Reg. No. 21903111) and (Reg. No. 21904705) and (Reg. No. 20904206) and (Reg. No. 20858007) and railway station (CO074-117----). Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor. <b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 21901241) bridge (Reg. No. 21901241), burial ground (LI021-020----), bridges (Reg. No. 21902134) and (Reg. No. 21903107) and (Reg. No. 21903111) and (Reg. No. 21904705) and (Reg. No. 20904206) and (Reg. No. 20858007) and railway station (CO074-117----). Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.	1	2
<b>Landscape</b>	The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes. More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.	=	=

Table 40. Appraisal Relating to Corridor 40 Limerick to Waterford

SEA Theme	Summary of the Potential Effects Associated with Corridor 40 Limerick to Waterford	Option	
		A	B
<b>Biodiversity</b>	<p><b>Options A &amp; B:</b> Options A and B diverge between Killeigh and Waterford. The following designated sites similarly affect both corridor options, Lower River Shannon SAC, Bansha Wood pNHA, Lower River Suir SAC, Scaragh Wood pNHA, Marfield Lake pNHA, Kilsheelin Lake pNHA, River Suir Below Carrick-On-Suir pNHA, Tibberaghny Marshes pNHA, and Lower River Suir (Coolfinn, Portlaw) pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads and cycleways where practicable (for example the Suir Blueway Greenway).</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Limerick (population c.94,200) with Waterford (population c.53,500) via Tipperary (population c.4,980), Cahir (population c.3,600), Clonmel (population c.17,140) and Carrick-on-Suir (population c.5,770).</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p> <p>Given Option B takes a less direct route between these settlements, Option A performs more favourably in relation to accessibility.</p>	1	2
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Limerick City, Tipperary town, Cahir, Ardfinnan, Clonmel, Carrick-on-Suir, Kilmacthomas and Waterford City and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) and forest (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational amenity infrastructure / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Limerick City, Tipperary town, Cahir, Clonmel, Carrick-on-Suir and Waterford City and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) and forest (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Groody, River Mulkear, River Aherlow, River Suir and River Clodiagh (Portlaw). The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Groody, River Mulkear, River Aherlow, River Suir, River Glasha and River Clodiagh (Portlaw). The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Limerick City and Waterford City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 40 Limerick to Waterford	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a barracks (Reg. No. 21518033), burial ground (LI014-026----), fulacht fia (LI014-144----), enclosure (LI024-021----), historic town (TS067-004----), ringfort 9 (TS067-079----), bridge (Reg. No. 22126003), enclosure (TS088-012----), bridges (Reg. No. 22120002) and (Reg. No. 22123027) and (Reg. No. 22900802).</p> <p>Given part of the proposed corridor is located along a river / blue way / historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a barracks (Reg. No. 21518033), burial ground (LI014-026----), fulacht fia (LI014-144----), enclosure (LI024-021----), historic town (TS067-004----), enclosure (TS076-070003-), gate lodge (Reg. No. 22900204) and a church (WA003-057----).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p>Option A is likely to perform more favourably in relation to this SEA theme, as it aligns along existing infrastructure (greenway / blueway corridor) and would rejuvenation and connect cultural heritage assets along this route.</p>	1	2
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

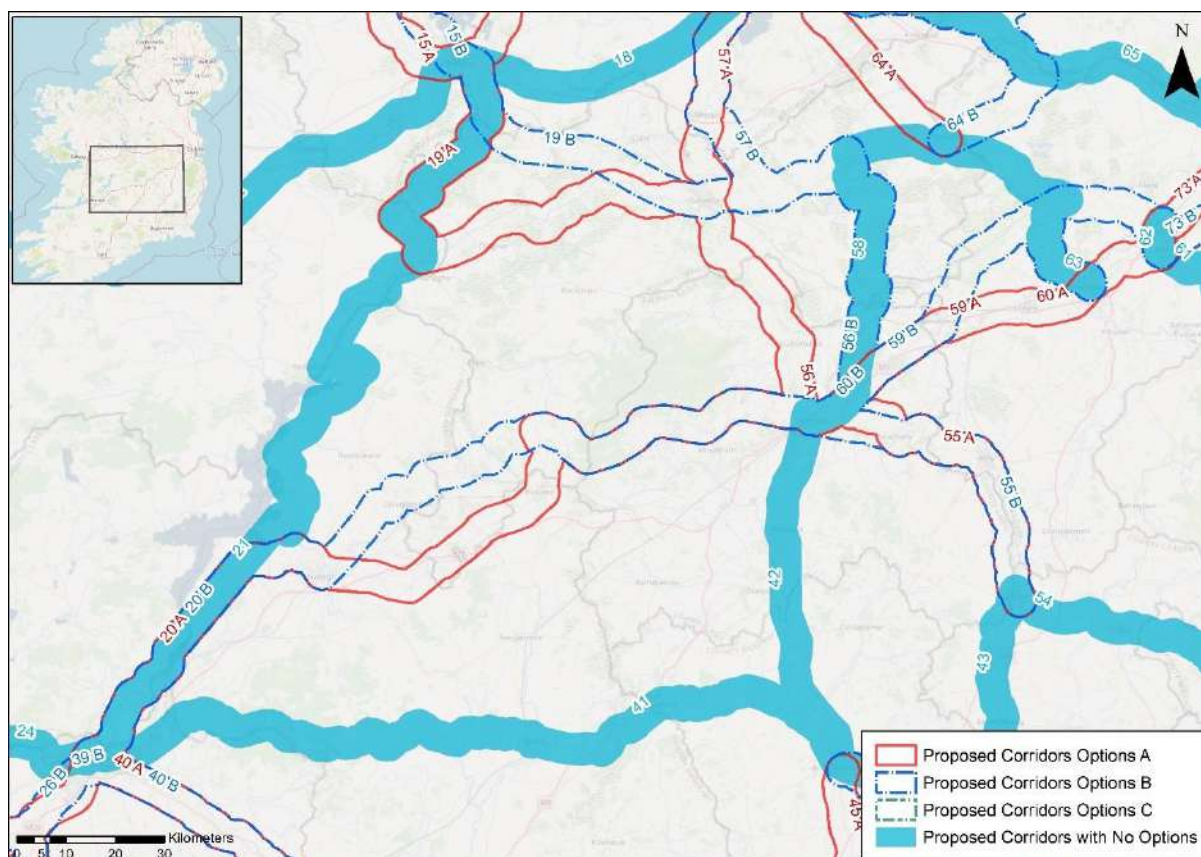


Figure B11: Map of corridor options 41 and 42

Table 41. Appraisal Relating to Corridor 41 Limerick to Kilkenny

SEA Theme	Summary of the Potential Effects Associated with Corridor 41 Limerick to Kilkenny	Impact
<b>Biodiversity</b>	<p>Lower River Shannon SAC, Clare Glen SAC and pNHA, Slievefelim to Silvermines Mountains SPA, Derygareen Heath pNHA, Lower River Suir SAC, Cabragh Wetlands pNHA, the Loughans SAC and pNHA, Spahill and Clomantagh Hill SAC and pNHA, River Nore SPA, River Barrow and River Nore SAC, Dunmore Complex pNHA, Newpark Marsh pNHA, and Lough Macask pNHA are all located within the corridor option.</p> <p>These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure such as along roads where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Limerick (population c.94,200) with Kilkenny (population c.26,510) via Annacotty (population c.2,930), Newport (population c.1,995), Thurles (population c.7,940) and Urlingford (population c.1,038). In this respect the corridor would support an enhancement of accessibility by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Limerick City, Thurles, Urlingford and Kilkenny City and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), forest and semi-natural areas (forest and semi-natural areas), mixed forest (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Shannon, River Annagh, River Owenbeg (Tipperary) and the River Nore. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Limerick City and Kilkenny City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>

SEA Theme	Summary of the Potential Effects Associated with Corridor 41 Limerick to Kilkenny	Impact
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a house (Reg. No. 21821005), bridge (TN037-001----), fulacht fia (TN037-033----), bridges (Reg. No. 22403905) and (Reg. No. 22312052), ringfort (TS042-026----), gardens (KK019-026208-) and a bridge (Reg. No. 12004007).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 42. Appraisal Relating to Corridor 42 Kilkenny to Portlaoise**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 42 Kilkenny to Portlaoise</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>The River Barrow and River Nore SAC, River Nore SPA, Dunmore Complex pNHA, Newpark Marsh pNHA, Ardaloo Fen pNHA, Inchbeg pNHA, River Nore/Abbeyleix Woods Complex pNHA, Lisbigney Bog SAC and pNHA, and Ridge of Portlaoise pNHA are all located within the corridor option. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure such as along roads where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Kilkenny (population c.26,510) with Portlaoise (population c.22,050) via Ballyragget (population c.1,080) and Abbeyleix (population c.1,770). In this respect the corridor would support an enhancement of accessibility by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Portlaoise and Kilkenny City and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), peat bogs (wetland), mixed forest (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Triogue and River Nore. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Portlaoise and Kilkenny City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a burial mound (LA023-061----), fountain (Reg. No. 12900718), bridge (Reg. No. 12303024) and a bridge (Reg. No. 12004004).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

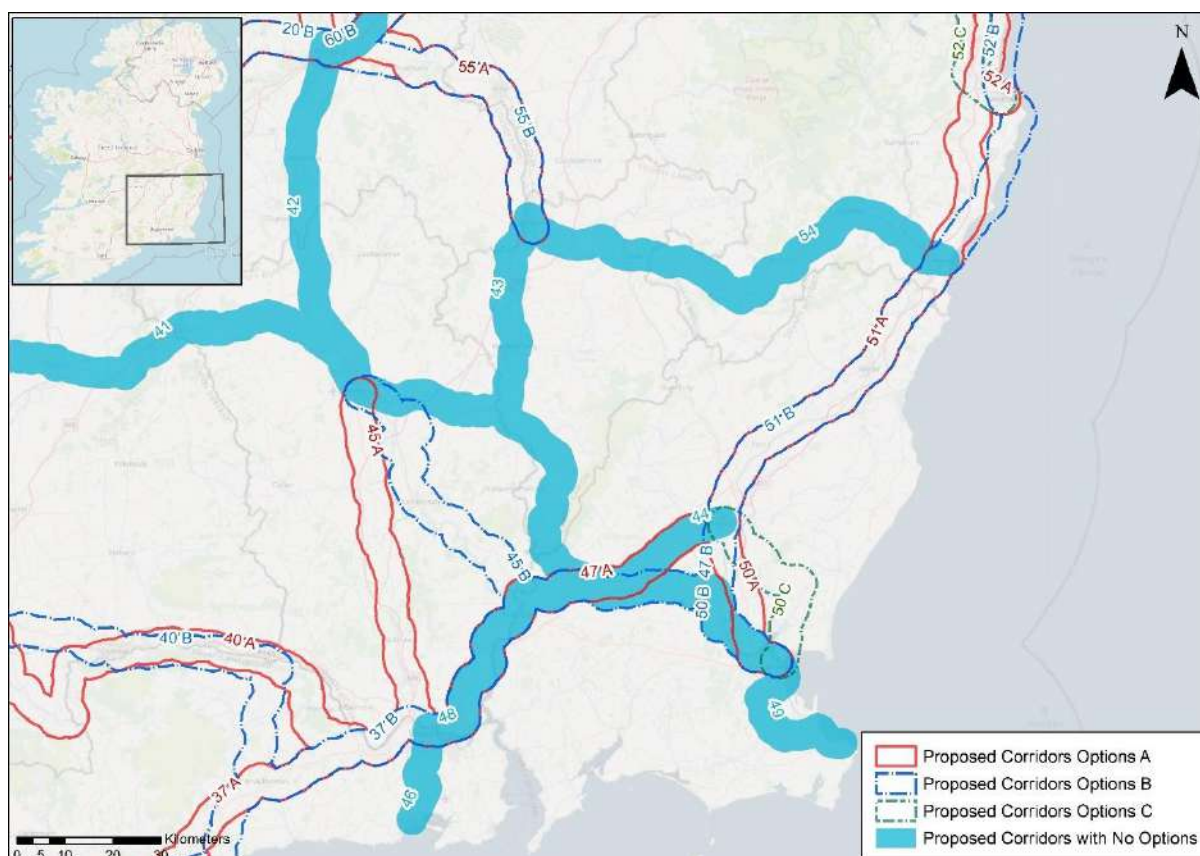


Figure B12: Map of corridor options 43, 44, 45, 46, 47, 48 and 49

Table 43. Appraisal Relating to Corridor 43 Kilkenny to Carlow

SEA Theme	Summary of the Potential Effects Associated with Corridor 43 Kilkenny to Carlow	Impact
<b>Biodiversity</b>	<p>The River Nore SPA, River Barrow and River Nore SAC, Newpark Marsh pNHA, Archersgrove pNHA, Ballymoon Esker pNHA, and Cloghrick Wood pNHA occur within the corridor. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as along roads and cycleways (for example East Kilkenny Cycle Route) where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Kilkenny (population c.26,510) with Carlow (population c.24,270) via Muinebeag (Bagenalstown) (population c.2,840). In this respect the corridor would support an enhancement of accessibility by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Kilkenny City, Muine Beg and Carlow and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Nore, River Gowran and the River Barrow. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Kilkenny City and Carlow. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>

SEA Theme	Summary of the Potential Effects Associated with Corridor 43 Kilkenny to Carlow	Impact
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 12309004), house (Reg. No. 12402001), castle (KK021-027----) and a lock (Reg. No. 103007030).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>



**Table 44. Appraisal Relating to Corridor 44 Kilkenny to Enniscorthy**

SEA Theme	Summary of the Potential Effects Associated with Corridor 44 Kilkenny to Enniscorthy	Impact
<b>Biodiversity</b>	<p>The River Barrow and River Nore SAC, River Nore SPA, Newpark Marsh pNHA, Archersgrove pNHA, Blackstairs Mountains SAC and pNHA, Pollmounty River Valley pNHA, Barrow River Estuary pNHA, and Slaney River Valley SAC are located in the vicinity of the corridor. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as along roads and cycleways where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Kilkenny (population c.26,510) with Enniscorthy (population c.11,380). The corridor would support an enhancement of accessibility by active travel modes to services and facilities in these settlements, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Kilkenny City and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), coniferous forests (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / railway line (greenway), loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Nore, River Barrow, River Mountain (Carlow) and the River Aughnacrew. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route in Kilkenny City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 12309004), house (Reg. No. 12402001), bridge (Reg. No. 10301904) and (Reg. No. 10302235), ringfort (WX030-012---) and a bridge (Reg. No. 15701943).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

Table 45. Appraisal Relating to Corridor 45 Kilkenny to Waterford

SEA Theme	Summary of the Potential Effects Associated with Corridor 45 Kilkenny to Waterford	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> Within the corridor are approximately two SACs, one SPA, and four pNHA/NHAs, including for the River Nore SPA, River Barrow and River Nore SAC Archersgrove pNHA, Lower River Suir SAC, Kilkeasy Bog pNHA and Grannyferry pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as along roads and cycleways (for example the South Kilkenny Cycle Loop) where practicable.</p> <p>Fewer designated sites are within the corridor for Option A than Option B.</p> <p><b>Option B:</b> Within the corridor there are approximately three SAC, one SPA, and nine pNHA/NHA, including for example River Nore SPA, River Barrow and River Nore SAC Archersgrove pNHA, Lower River Suir SAC, Thomastown Quarry SAC, Thomastown pNHA, Barrow River Estuary pNHA, and Oaklands Wood pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure such as along roads and cycleways (for example the East Kilkenny Cycle Route and the Southeast Greenway) where practicable.</p>	1	2
<b>Population and Human Health</b>	<p>The corridor options would link Kilkenny (population c.26,510) with Waterford (population c.53,500). Option B would also link Thomastown (population c.2,445) and New Ross (population c.8,040).</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p> <p>Given the corridor option links two additional settlements, Option B performs better in relation to the SEA theme (although Option A brings benefits through comprising a more direct corridor between Kilkenny and Waterford).</p>	2	1
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Kilkenny City and Waterford City and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Kilkenny City, Bennettsbridge, Thomastown, New Ross and Waterford City and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, use existing infrastructure, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Nore, Stonyford Stream, Little Arrigle, River Blackwater. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Nore, River Rathgarvan, River Clidagh and Barrow Estuary and Suir Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Kilkenny City and Waterford City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option B, through linking two additional settlements, will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	1	2

SEA Theme	Summary of the Potential Effects Associated with Corridor 45 Kilkenny to Waterford	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a concentric enclosure (KK023-016----), ring ditch (KK023-140----), bridge (Reg. No. 12321008) and a ritual site (KK036-030---).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as an enclosure (KK019-114----), bridge (Reg. No. 12317011), holy (WX029-006----) and fulacht fia (KK046-012----).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme, as it aligns along existing infrastructure (greenway / historic rail corridor) and would rejuvenation and connect cultural heritage assets along this route.</p>	2	1
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

**Table 46. Appraisal Relating to Corridor 46 Waterford to Tramore**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 46 Waterford to Tramore</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>The route runs alongside the Lower River Suir SAC, Tramore Dunes and Backstrand SAC and pNHA, Tramore Back Strand SPA and passes through Kilbarry Bog pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as along roads where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Waterford (population c.53,500) with Tramore (population c.10,381). In this respect the corridor would support an enhancement of accessibility by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Waterford City and Tramore and areas of pastures (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Suir, St. John's River and the River Monloun. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Waterford City and Tramore. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a windmill (WA009-036----), bridge (WA017-015----), bridge (Reg. No. 22901701) and a house (Reg. No. 22816129).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

Table 47. Appraisal Relating to Corridor 47 Enniscorthy to Waterford

SEA Theme	Summary of the Potential Effects Associated with Corridor 47 Enniscorthy to Waterford	Option	
		A	B
<b>Biodiversity</b>	<p><b>Options A &amp; B:</b> The route diverges between Palace West and Enniscorthy. Both corridors traverse or are located next to the Lower River Suir SAC, King's Channel pNHA, Barrow River Estuary pNHA, River Barrow and River Nore SAC, Oaklands Wood pNHA, Slaney River Valley SAC and pNHA, and Wexford Harbour and Slobs SPA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as along roads and cycleways (for example the Southeast Greenway) where practicable.</p>	1	2
<b>Population and Human Health</b>	<p>The corridor options would link Enniscorthy (population c.11,380) with Waterford (population c.53,500) via New Ross (population c.8,040).</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p>	=	=
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Enniscorthy, New Ross and Waterford City and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic railway, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Enniscorthy, New Ross and Waterford City and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic railway, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Slaney, River Nore, Barrow Nore Estuary and the River Suir and Suir Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Urrin, Clonmore River, River Aughnacrew, River Nore, River Suir and the Barrow Nore Estuary and Suir Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Enniscorthy and Waterford City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 47 Enniscorthy to Waterford	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a fulacht fia (KK046-012----), rock art (KK044-025----) and religious house (WX029-013007-) and a bridge (Reg. No. 15701943).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a fulacht fia (KK046-012----), rock art (KK044-025----), fulacht fia (WX030-094----), ringfort (WX030-016----) and a railway station (Reg. No. 15703101).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme, as it aligns along existing infrastructure (railway) and would rejuvenation and connect cultural heritage assets along this route.</p>	2	1
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes. More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

**Table 48. Appraisal Relating to Corridor 48 Waterford to Wexford**

SEA Theme	Summary of the Potential Effects Associated with Corridor 48 Waterford to Wexford	Impact
<b>Biodiversity</b>	<p>The route traverses the Lower River Suir SAC, King's Channel pNHA, Barrow River Estuary pNHA, River Barrow and River Nore SAC, Oaklands Wood pNHA, and Slaney River Valley SAC and pNHA, Wexford Slob and Harbour pNHA, Wexford Harbour and Slob SPA, Slaney River Valley SAC. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as along roads and cycleways (for example the Southeast Greenway) where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Waterford (population c.53,500) with Wexford (population c.20,188) via New Ross (population c.8,040). In this respect the corridor would support an enhancement of accessibility to services and facilities by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Waterford City, New Ross and Wexford and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), mixed forest (forest and semi-natural areas) and wetland (inland marshes) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic railway, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Luffany, River Nore, River Slaney, Clonmore River and the Barrow Nore Estuary and Suir Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Waterford City and Wexford. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a fulacht fia (KK046-012----), rock art (KK044-025----), ringfort (WX030-016----). railway station (Reg. No. 15703101) and church (WX032-009001-).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 49. Appraisal Relating to Corridor 49 Wexford to Rosslare Europort**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 49 Wexford to Rosslare Europort</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>The Wexford Harbour and Slobs SPA and pNHA, Slaney River Valley SAC, and Carnsore Point SAC occur within the route corridor. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as along roads and cycleways where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Wexford (population c.20,188) with Rosslare Europort via Rosslare (population c.1,620). This will support an enhancement of accessibility by active travel modes to the key employment centre of the port, as well as services and facilities available in Wexford, promoting social inclusion. The corridor also has the potential to bring benefits for the visitor economy and support sustainable tourism.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces and seaport) in Wexford, Rosslare and Rosslare Harbour and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / railway, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Rathaspick, River Assaly and the River Milltown (Rosslare). The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Wexford and Rosslare Harbour. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a ritual site (WX037-038----), gate lodge (Reg. No. 15704265), moated site (WX042-092----) and a windmill (WX048-018----).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>



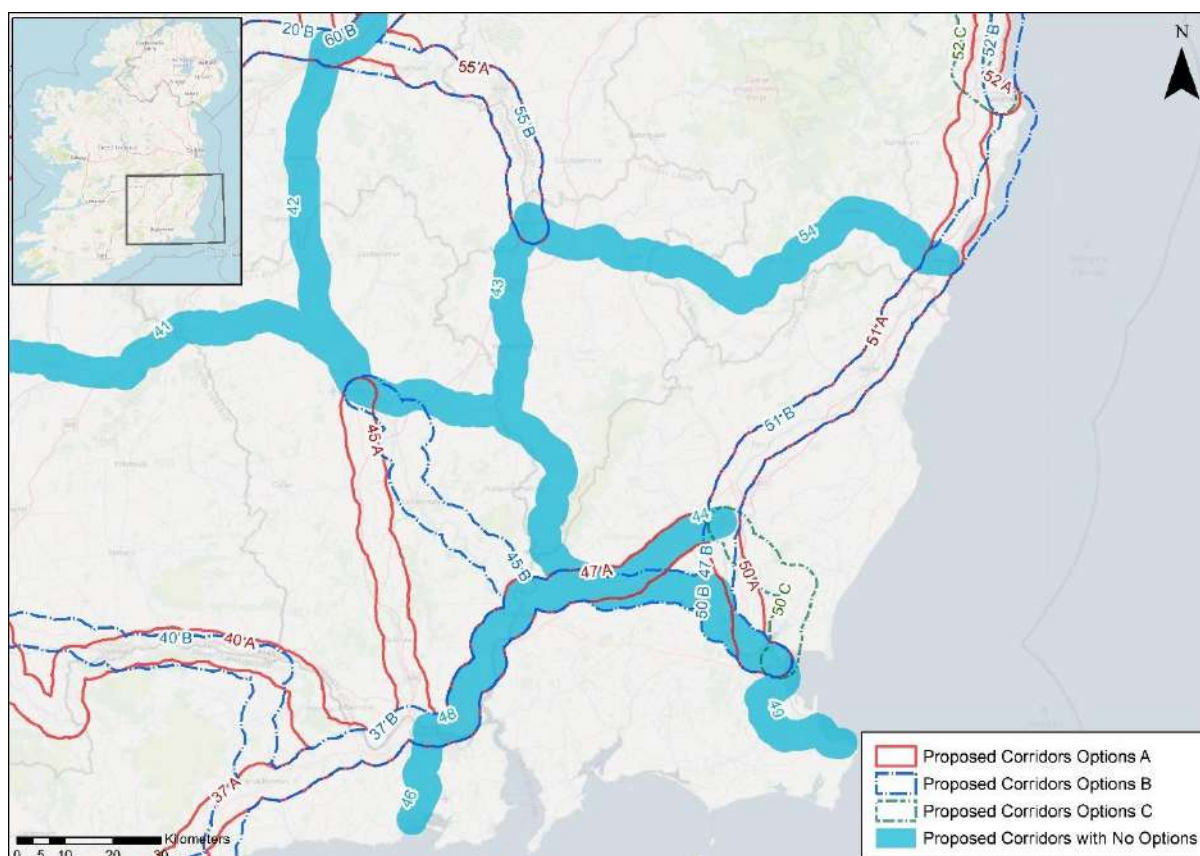


Figure B13: Map of corridor options 50, 51, 52 and 54 (see Figure B14 for option 53)

Table 50. Appraisal Relating to Corridor 50 Enniscorthy to Wexford

SEA Theme	Summary of the Potential Effects Associated with Corridor 50 Enniscorthy to Wexford	Option		
		A	B	C
<b>Biodiversity</b>	<p><b>Options A, B &amp; C:</b> The Slaney River Valley pNHA, Wexford Harbour and Slobbs SPA, Slaney River Valley SAC, Wexford Slobbs and Harbour pNHA, Wexford Harbour and Slobbs SPA, and Slaney River Valley SAC are located within all option corridors. In addition, Screen Hills SAC and pNHA, and Ballyroe Fen and Lake pNHA are located within corridor C. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as along roads.</p>	=	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Enniscorthy (population c.11,380) with Wexford (population c.20,188). Option C would also link Castlebridge (population c.1,840).</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p> <p>Given Option C would also link Castlebridge, Option C is slightly better performing in relation to this SEA theme than Options A and B.</p>	2	2	1
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Enniscorthy, Ollagat and Wexford town and areas of pastures (agricultural areas), inland marshes (wetland), construction site and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Enniscorthy and Wexford town and areas of pastures (agricultural areas), inland marshes (wetland) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option C:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Enniscorthy, Castlebridge and Wexford town and areas of</p>	=	=	2

SEA Theme	Summary of the Potential Effects Associated with Corridor 50 Enniscorthy to Wexford	Option		
		A	B	C
	<p>pastures (agricultural areas), inland marshes (wetland) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Option C would potentially require more land-take for this route option. Option A &amp; B are more likely to perform more favourably in relation to this SEA theme as they align more along existing infrastructure (roads) and would require less land-take (from agriculture).</p>			
<b>Water</b>	<p><b>Option A:</b> The watercourse along the route of the proposed corridor is the River Slaney and the Slaney Estuary. The WFD status of this watercourse ranges between 'moderate' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Slaney, Slaney Estuary, Clonmore River and the Tinnokilla Stream. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option C:</b> Several watercourses occur along the route of the proposed corridor, including the River Slaney, Slaney Estuary and the River Sow. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B &amp; C:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Enniscorthy and Wexford town. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option C, through also linking Castlebridge, will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	2	2	1
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a castle tower (WX037-027--), ringfort (WX032-029----), and a house (Reg. No. 15603200).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a castle tower (WX037-027--), bridges (Reg. No. 15703218), and (Reg. No. 15702613).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option C:</b> A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 15501001), malt house (Reg. No. 15614019) and a gate lodge (Reg. No. 15702640).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=	=

Table 51. Appraisal Relating to Corridor 51 Enniscorthy to Wicklow

SEA Theme	Summary of the Potential Effects Associated with Corridor 51 Enniscorthy to Wicklow	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> The route diverges between Arklow and Wicklow. Option A is located further away from designated sites where it diverges from Option B. Within the corridor there are approximately three SACs, two SPAs, and ten pNHA/NHAs, including for example Slaney River Valley SAC and pNHA, Buckronev-Brittis Dunes and Fen SAC and pNHA, Wicklow Town Sites pNHA, the Murrough Wetlands SAC, and Glenealy Woods pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure such as along roads.</p> <p><b>Option B:</b> The route diverges between Arklow and Wicklow. Within the corridor there are approximately five SACs, two SPAs, and ten pNHA/NHAs, including for example Slaney River Valley SAC and pNHA, Buckronev-Brittis Dunes and Fen SAC and pNHA, Wicklow Town Sites pNHA, the Murrough Wetlands SAC, Magherabeg Dunes SAC and pNHA, and Wicklow Reef SAC. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure such as along roads.</p>	1	2
<b>Population and Human Health</b>	<p>The corridor options would link Enniscorthy (population c.11,380) with Wicklow (population c.13,160) via Ferns (population c.1,415), Gorey (population c.9,820) and Arklow (population c.13,160). Option A also links Rathnew (population c.3,370)</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p> <p>Whilst Option A would also link Rathnew, Option B has the potential to deliver additional benefits for the visitor economy given it runs alongside the coast.</p>	=	=
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Enniscorthy, Gorey, Arklow and Wicklow town and areas of pastures (agricultural areas) a non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Enniscorthy, Gorey, Arklow, Ardanay and Wicklow town and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and inland marshes (wetland) as per CORINE 2018.</p> <p>Should the proposed routes primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Slaney, Avoca Estuary, River Bann, River Banoge, River Inch, Ballyduff Stream, River Redcross and Rathnew Stream. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Slaney, Avoca Estuary, River Inch, Templerainy Stream and the Three-mile Water stream. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Enniscorthy and Wicklow town. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 51 Enniscorthy to Wicklow	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a fulacht fia (WX020-095----), burial (WX020-001005-) and burnt mound (WI045-015----). The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a fulacht fia (WX020-095----), burial (WX020-001005-) and a prehistoric site (WI036-027---). The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

Table 52. Appraisal Relating to Corridor 52 Wicklow to Bray

SEA Theme	Summary of the Potential Effects Associated with Corridor 52 Wicklow to Bray	Option		
		A	B	C
<b>Biodiversity</b>	<p><b>Options A, B &amp; C:</b> A number of designated sites are common to all three options. These are, Wicklow Head SPA and pNHA, Wicklow Town Sites pNHA, the Murrough SPA and pNHA, the Murrough Wetlands SAC, and Bray Head SAC and pNHA. The Glen of the Downs SAC and pNHA is common to Options A and C, while Devil's Glen pNHA is located within the option C corridor only. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Option B runs along the coast and is located within the Murrough SPA and pNHA, and the Murrough Wetlands SAC, however this route could potentially utilise existing infrastructure along its route. Routes A and C are located further away from these designated sites.</p> <p>Land take requirements are not known at this stage; however it is anticipated the routes would utilise existing infrastructure such as roads and cycleways where practicable.</p>	2	3	1
<b>Population and Human Health</b>	<p>The corridor options would link Bray (population c.32,600) with Wicklow (population c.13,160).</p> <p><b>Option A</b> would also link the two towns with Rathnew (population c.3,370), Kilcoole (population c.4,240) and Greystones-Delgany (population c.18,140), and <b>Option C</b> would also link the two towns with Rathnew (population c.3,370), Ashford (population c.1,425), Newtownmountkennedy (population c.2,835), Kilpedder (population c.1,255) and Greystones-Delgany (population c.18,140). <b>Option B</b> would run along the coast.</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p> <p>Whilst Option A and C would link more settlements, Option B has the potential to deliver additional benefits for the visitor economy given it runs along the coast.</p>	=	=	=
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Wicklow Town, Kilcoole, Greystones and Bray and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and wetland (inland marshes) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Wicklow Town, Greystones and Bray and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) and wetland (inland marshes) as per CORINE 2018.</p> <p>Should the route primarily lie within an existing railway corridor, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option C:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Wicklow Town, Ashford, Newtownmount Kennedy, Greystones and Bray and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and wetland (inland marshes) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including Rathnew Stream, Kilcoole Stream and Dargle River and Broad Lough. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Vartry, Kilcoole Stream, Kilcool Marsh, Dargle River and Broad Lough. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option C:</b> Several watercourses occur along the route of the proposed corridor, including Rathnew Stream, River Vartry and Dargle River and Broad Lough. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B &amp; C:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Wicklow Town and Bray. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 52 Wicklow to Bray	Option		
		A	B	C
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively / positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=	=
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as an architectural feature (WI025-012005-), hotel (Reg. No. 16402506) and a house (Reg. No. 16400819).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a prehistoric site (WI019-038----), station house (Reg. No. 1640191) and a house (Reg. No. 16400819).</p> <p>Given part of the proposed corridor is located along a railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p><b>Option C:</b> A range of cultural heritage assets are present within the proposed corridor, such as a house (Reg. No. 16402512), ritual site (WI019-015----) and a house (Reg. No. 16400819).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme, as it aligns more along existing infrastructure (railway) and would rejuvenation and connect cultural heritage assets along this route.</p>	=	1	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=	=

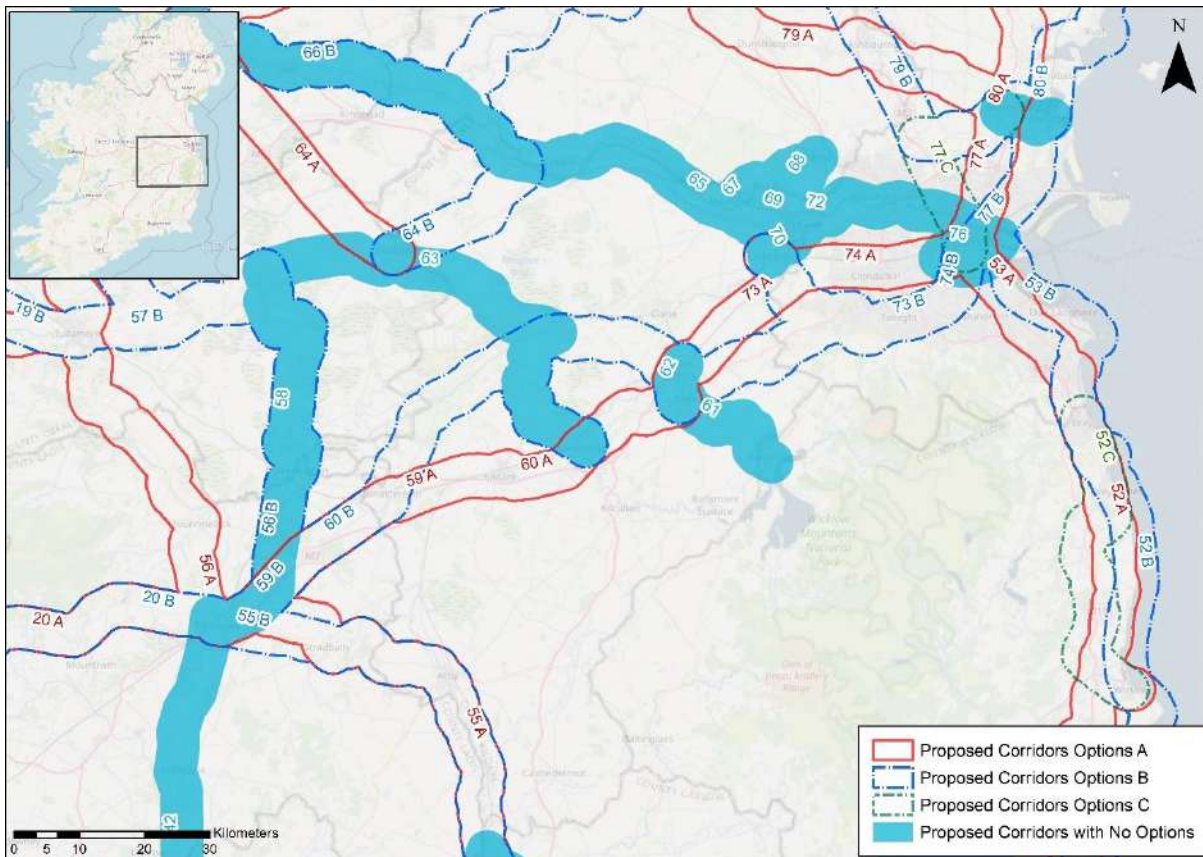


Figure B14: Map of corridor options 53 and 55 and 56 (see Figure B13 for option 54)

Table 53. Appraisal Relating to Corridor 53 Bray to Dublin

SEA Theme	Summary of the Potential Effects Associated with Corridor 53 Bray to Dublin	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A &amp; B:</b> The route diverges between Shankill and Dublin. Option B is located along the coastline where a number of designated sites are located, while Option A is slightly inland and situated further away from designated sites.</p> <p>The designated sites common to both options include Loughlinstown Woods pNHA, Dalkey Coastal Zone and Killiney Hill pNHA, South Dublin Bay SAC and pNHA, South Dublin Bay and River Tolka Estuary SPA, Grand Canal pNHA, and Royal Canal pNHA.</p> <p>Dalkey Islands SPA, and Rockabill to Dalkey Island SAC occur adjacent to Option B only.</p> <p>These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the routes would utilise existing infrastructure such as roads and cycleways where practicable.</p>	1	2
<b>Population and Human Health</b>	<p>The two options would both link Dublin with Bray, supporting accessibility via active modes of travels for the Dublin communities located along the routes. As such, the options will support accessibility to the services, facilities and amenities and job opportunities available in Dublin. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing.</p> <p>Option B, through running along the coastline of the southern part of Dublin Bay, may offer additional opportunities relating to tourism offer and the visitor economy.</p>	2	1
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Bray, Shankill and Dublin City and Suburbs and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Bray and Dublin City and Suburbs and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 53 Bray to Dublin	Option	
		A	B
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Dargle River, Shangahagh Stream, Carrickmines Stream, Brewery Stream, and the Grand Canal. The WFD status of these watercourses ranges between 'moderate' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the Dargle River, Kill of the Grange Stream, Brewery Stream, Dodder River and Grand Canal and the Liffey Estuary. The WFD status of these watercourses ranges between 'moderate' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Option A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Bray and Dublin City and Suburbs. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a gate lodge (Reg. No. 60260162), bridge (Reg. No. 60260118) and an Ecclesiastical site (DU023-007----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets, particularly in Dublin City and Suburbs. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a gate lodge (Reg. No. 60260162), Martello tower (DU026-089----), quay (DU023-020004-) and a fort (DU023-052001-).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets, particularly along the coast. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=



**Table 54. Appraisal Relating to Corridor 54 Carlow to Arklow**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 54 Carlow to Arklow</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>Between Carlow and Arklow the corridor traverses a number of designated sites, these are: Slaney River Valley SAC, Tomnafinnoge Wood pNHA, Avoca River Valley pNHA, and Arklow Town Marsh pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure such as roads and cycleways where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Carlow (population c.24,270) with Arklow (population c.20,188) via Tullow (population c.4,670) and Aughrim (population c.1,440). In this respect the corridor would support an enhancement of accessibility to services and facilities from communities along the route by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Carlow, Tullow and Arklow and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), mixed forest (forest and semi-natural areas), forest and semi-natural areas (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / historic railway, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Burren, River Slaney, Blacklion Stream, Derry Water River, Avoca River and Avoca Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Carlow and Arklow. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as an enclosure (CW007-161----), fulacht fia (CW007-099----) and a castle (CW008-045002-) and a gate lodge (Reg. No. 16404312).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

Table 55. Appraisal Relating to Corridor 55 Carlow to Portlaoise

SEA Theme	Summary of the Potential Effects Associated with Corridor 55 Carlow to Portlaoise	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A &amp; B:</b> Both routes are similar with the exception of a small divergence between Stradbally and Portlaoise. The route traverses or is adjacent to Ridge of Portlaoise pNHA, Dunamase Woods pNHA, Rock of Dunamase pNHA, Kilteale Hill pNHA, The Great Heath of Portlaoise pNHA, River Barrow and River Nore SAC, Stradbally Hill pNHA, Barrow Valley at Tankardstown Bridge pNHA, and Oakpark pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the routes would utilise existing infrastructure where practicable.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Carlow (population c.24,270) with Portlaoise (population c.22,050) via Athy (population c.9,680) and Stradbally (population c.1,350).</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p>	=	=
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Carlow, Athy and Stradbally and Portlaoise and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) and rail network (artificial surfaces) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / railway line, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Carlow, Athy and Stradbally and Portlaoise and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) and rail network (artificial surfaces) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space and will utilise part of a railway line, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Barrow, River Stradbally and the River Triogue. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Barrow, River Stradbally and the River Triogue. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Carlow and Portlaoise. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a cemetery (CW002-004----), ring ditch (KD037-030----), canal (Reg. No. 11500056) and a burial ground (LA013-050----).</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a cemetery (CW002-004----), ring ditch (KD037-030----), bridge (Reg. No. 12900429) and a house (Reg. No. 12507029).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridors also have the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 55 Carlow to Portlaoise	Option	
		A	B
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

Table 56. Appraisal Relating to Corridor 56 Tullamore to Portlaoise

SEA Theme	Summary of the Potential Effects Associated with Corridor 56 Tullamore to Portlaoise	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> Within the corridor there are two SACs, no SPA, and five pNHA/NHAs, including for example Ridge of Portlaoise pNHA, River Barrow and River Nore SAC, Charleville Wood SAC and pNHA, Clonreher Bog NHA, and Clonad Wood pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the routes would utilise existing infrastructure such as roads where practicable.</p> <p><b>Option B:</b> Within the corridor are two SACs, no SPA, and seven pNHA/NHAs, including for Ridge of Portlaoise pNHA, River Barrow and River Nore SAC, Charleville Wood SAC and pNHA, Grand Canal pNHA, Daingean Bog NHA, and the Great Heath of Portlaoise pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the routes would utilise existing infrastructure such as roads and cycleways (for example the Grand Canal Greenway) where practicable.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Tullamore (population c.24,270) with Portlaoise (population c.22,050). Option A would also link Mountmellick (population c.4780), whilst Option B, which comprises a much longer route, would also link Daingean (population c.1,080) and Portarlington (population c.8,368).</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p>	=	=
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Portlaoise, Mountmellick and Tullamore and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Portlaoise, Portarlington and Tullamore and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational amenity infrastructure, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme, as it aligns more along existing infrastructure (canal) and would rejuvenation and connect cultural heritage assets along this route.</p>	2	1
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Triogue, Kylegrove Stream, River Owenass, River Barrow, River Clodiagh and the Tullamore River. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Triogue, River Cushina, River Daingean, Tullamore River and the Grand Canal. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Portlaoise and Tullamore. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p><b>Option A:</b> The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 56 Tullamore to Portlaoise	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as an enclosure (LA013-002----), church (LA008-032001-) and a house Reg. No. 14807111). The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a ringfort (LA013-028----), bridge (Reg. No. 14918004) and a lock (Reg. No. 14917034). Given part of the proposed corridor is located along a river / canal / greenway, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme, as it aligns along existing infrastructure (river / canal / greenway) and would rejuvenation and connect cultural heritage assets along this route.</p>	2	1
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

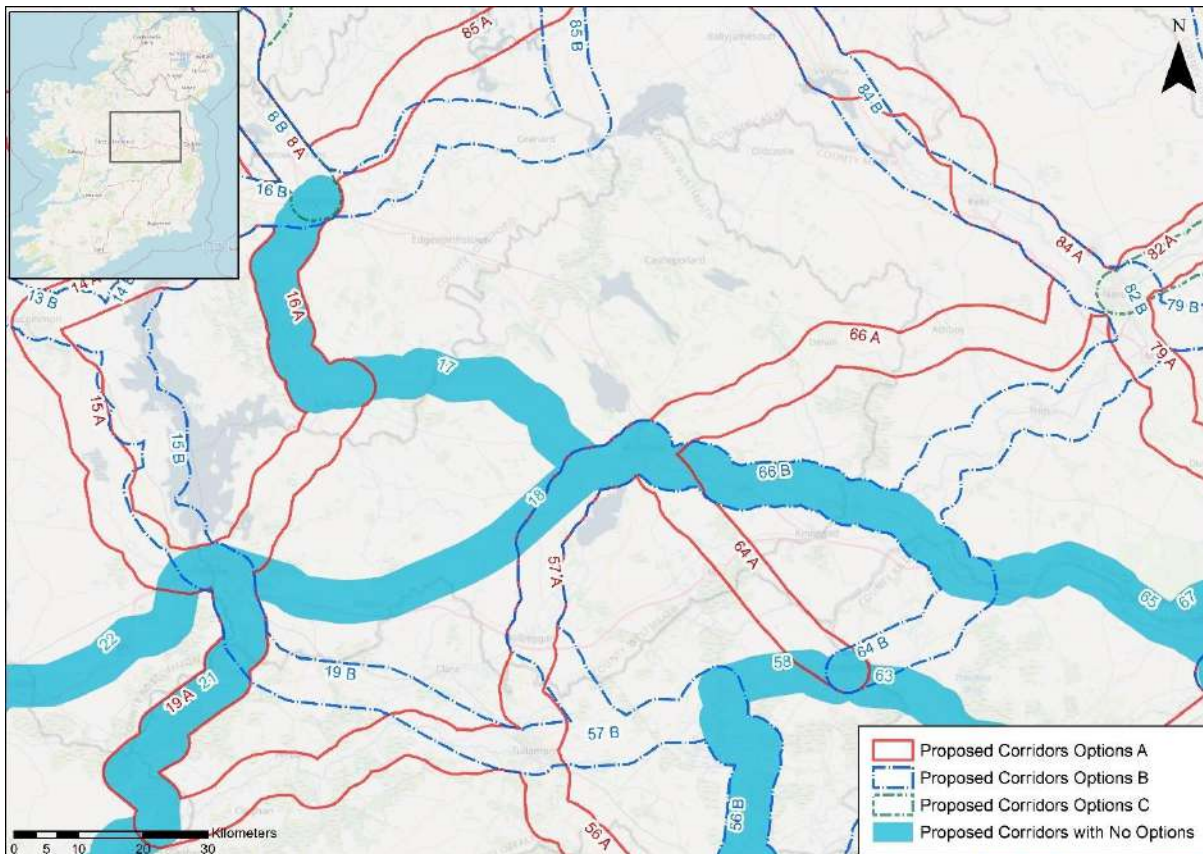


Figure B15: Map of corridor option 57

Table 57. Appraisal Relating to Corridor 57 Mullingar to Tullamore

SEA Theme	Summary of the Potential Effects Associated with Corridor 57 Mullingar to Tullamore	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> Option A and B diverge between Tullamore and Kibeggan. The corridor option traverses two SACs, one SPA, and seven pNHA/NHAs, including Lough Ennell SAC, SPA and pNHA, Split Hills and Long Hill Esker SAC and pNHA, Royal Canal pNHA, Grand Canal pNHA, Ballyduff Wood pNHA, and Derrygolan Esker pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the routes would utilise existing infrastructure such as roads where practicable. Option A is located further away from designated sites where it diverges from Option B.</p> <p><b>Option B:</b> The corridor option traverses two SACs, one SPA, and eight pNHAs including the Lough Ennell SAC, SPA and pNHA, Split Hills and Long Hill Esker SAC and pNHA, Royal Canal pNHA, Grand Canal pNHA, Ardan Wood pNHA, and Murphy's Bridge Esker pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the routes would utilise existing infrastructure such as roads where practicable. For example Option B could potentially use existing infrastructure such as the Grand Canal Greenway where it diverges from Option A and follows the Grand Canal pNHA.</p>	1	2
<b>Population and Human Health</b>	<p>The corridor options would link Tullamore (population c.24,270) with Mullingar (population c.20,930) via Kibeggan (population c.1,290).</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p> <p>Whilst Option A is a more direct route, Option B will utilise the Royal Canal, supporting the use of the canal as a tourism asset.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 57 Mullingar to Tullamore	Option	
		A	B
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Tullamore and Mullingar and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) peat bogs (wetland) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational amenity infrastructure (Royal Canal) loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Tullamore and Mullingar and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) peat bogs (wetland) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational amenity infrastructure (Royal and Grand Canals), loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme, as it aligns more along existing infrastructure (canal) and would rejuvenation and connect cultural heritage assets along this route.</p>	2	1
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Grand Canal, Silver River and the River Brosna. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the Grand Canal, Tullamore River, Silver River and the River Brosna. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Tullamore and Mullingar. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a site (OF017-037----), church (Reg. No. 14909006), mill Reg. No. 15321036) and a bridge (Reg. No. 15401802).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a lock (Reg. No. 149170200), bridge (Reg. No. 14918006) and a bridge (Reg. No. 15403814).</p> <p>Given part of the proposed corridor is located along a canal / greenway, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme, as it aligns more along existing infrastructure (Royal Canal) and would rejuvenation and connect cultural heritage assets along this route.</p>	2	1
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

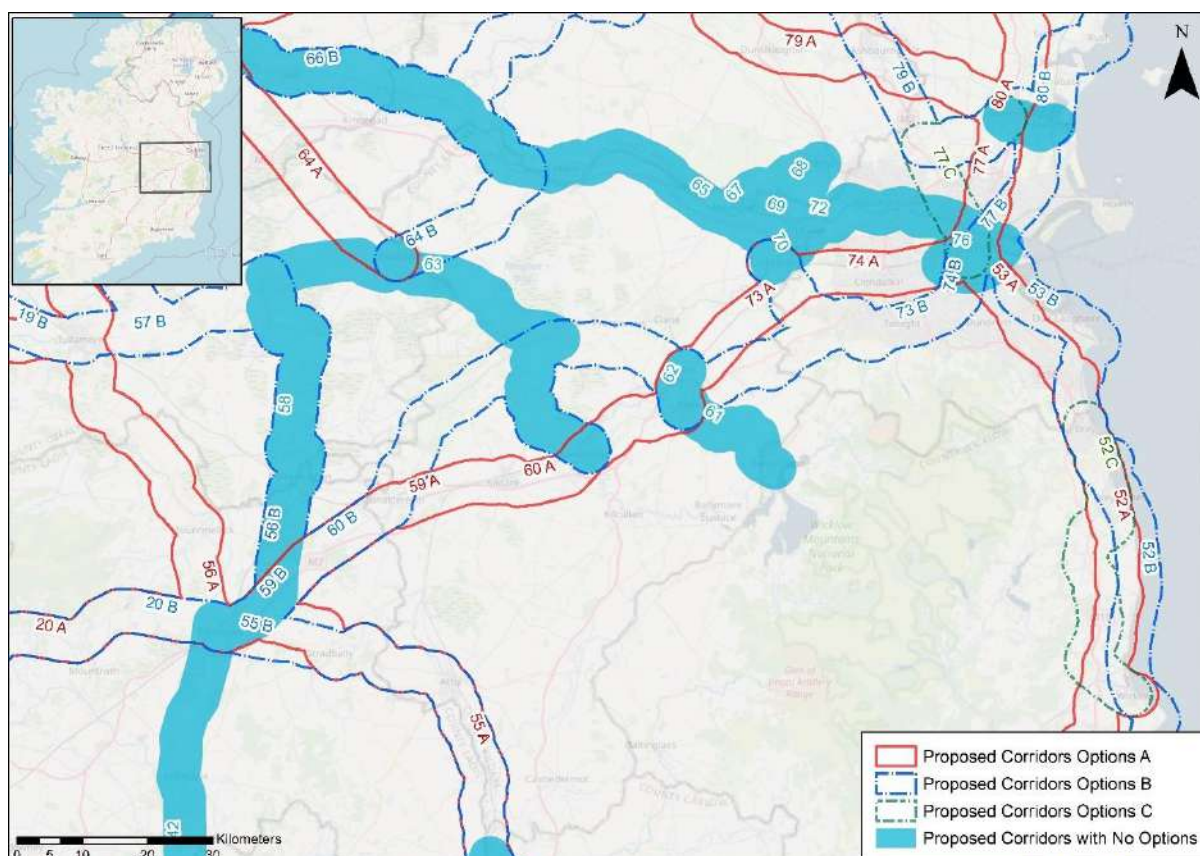


Figure B16: Map of corridor options 58, 59 and 60

Table 58. Appraisal Relating to Corridor 58 Edenderry to Portlaoise

SEA Theme	Summary of the Potential Effects Associated with Corridor 58 Edenderry to Portlaoise	Impact
<b>Biodiversity</b>	<p>The corridor runs alongside the Grand Canal pNHA from approximately Edenderry to Toberdaly and crosses the River Barrow and River Nore SAC near Portarlinton. Other designated sites within the corridor are Emo Court pNHA, the Great Heath of Portlaoise pNHA, Dunamase Woods pNHA, and the Ridge of Portlaoise pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure such as roads and cycleways (for example the Grand Canal Greenway) where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Edenderry (population c.7,360) with Portlaoise (population c.22,050) via Portarlinton (population c.8,370). In this respect the corridor would support an enhancement of accessibility to services and facilities from communities along the route by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Edenderry, Portarlinton and Portlaoise and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), coniferous forests (forest and semi-natural areas), mixed forest (forest and semi-natural areas) and peat bogs (wetland) as per CORINE 2018. Should the route primarily involve the reallocation of road space / recreational amenity infrastructure (Grand Canal), loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Triogue, River Barrow, River Cushina, Esker Stream and the Grand Canal. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Edenderry and Portlaoise. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>



SEA Theme	Summary of the Potential Effects Associated with Corridor 58 Edenderry to Portlaoise	Impact
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 14911021), church (OF019-001003-) and an enclosure (LA013-024----).</p> <p>Given a small part of the proposed corridor is located along a canal / greenway, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

Table 59. Appraisal Relating to Corridor 59 Portlaoise to Naas

SEA Theme	Summary of the Potential Effects Associated with Corridor 59 Newbridge to Naas	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A &amp; B:</b> Options A and B are located between Naas and Portlaoise. Whilst the corridor options diverge between Naas and Monasteravin both corridors options traverse similar designated sites. The designated sites traversed by both options are: the River Barrow and River Nore SAC, Derris Wood pNHA, Emo Court pNHA, the Great Heath of Portlaoise pNHA, Dunamase Woods pNHA, Ridge of Portlaoise pNHA, and Grand Canal pNHA. Option A also traverses Pollardstown Fen SAC and pNHA, and Curragh (Kildare) pNHA, while Option B traverses Ballynafagh Bog SAC and pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the routes would utilise existing infrastructure such as roads, towpaths and cycleways (for example the Grand Canal Greenway) where practicable.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Portlaoise (population c.22,050) with Naas (population c.21,400) via Monasterevan (population c.4,250).</p> <p><b>Option A</b> will also link Kildare (population c.8,634) and Newbridge (population c. 22,742) and <b>Option B</b> will also link Rathangan (population c.2,610) and Sallins (population c. 5,849).</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p> <p>Given Option A links larger population centres, the option performs better than Option B in relation to this SEA theme.</p>	1	2
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Newbridge and Naas and areas of pastures (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational amenity infrastructure, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Portlaoise, Monasterevan, Rathangan and Naas and areas of pastures (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme as it aligns more along existing infrastructure (Grand Canal) and would require less land-take (from agriculture).</p>	2	1
<b>Water</b>	<p><b>Option A:</b> There is a watercourse along the route of the proposed corridor, this is the River Liffey. The WFD status of this watercourse ranges between 'good' and 'moderate' during the 2013-2018 monitoring period. The watercourse within the proposed corridor is 'at risk'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Triogue, River Barrow, River Slate, River Liffey and the Grand Canal. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Option A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Newbridge and Naas. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option A, given it links larger population centres, will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	1	2

SEA Theme	Summary of the Potential Effects Associated with Corridor 59 Newbridge to Naas	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as an enclosure (KD023-010----), bridge (Reg. No. 1190190) and a gatehouse (KD019-032---).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a ringfort (LA005-009----), house (Reg. No. 11902112) and a school (Reg. No. 11901809). Given a part of the proposed corridor is located along a canal / greenway, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme, as it aligns along existing infrastructure (greenway / Grand Canal) and would rejuvenation and connect cultural heritage assets along this route.</p>	2	1
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

Table 60. Appraisal Relating to Corridor 60 Portlaoise to Newbridge

SEA Theme	Summary of the Potential Effects Associated with Corridor 60 Portlaoise to Newbridge	Option	
		A	B
<b>Biodiversity</b>	<p><b>Options A &amp; B:</b> Options A and B are located between Newbridge and Portlaoise. Whilst the corridor options diverge between Newbridge, Ballyteige and Monasteravin, both corridors traverse similar designated sites. The designated sites traversed by both options are: the River Barrow and River Nore SAC, Derries Wood pNHA, Emo Court pNHA, the Great Heath of Portlaoise pNHA, Dunamase Woods pNHA, Ridge of Portlaoise pNHA, Grand Canal pNHA, Pollardstown Fen SAC and pNHA, and Mouds Bog SAC and pNHA. Option A also traverses Curragh (Kildare) pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the routes would utilise existing infrastructure such as roads where practicable.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Portlaoise (population c.22,050) with Newbridge (population c.22,742) via Monasterevin (population c.4,250).</p> <p>Option A will also link Kildare (population c.8,634), and Option B will also link Rathangan (population c.2,610).</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p> <p>Given Option A links a larger population centre, the option performs better than Option B in relation to this SEA theme.</p>	1	2
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Portlaoise, Monasterevin, Kildare and Newbridge and areas of pastures (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Portlaoise, Monasterevin, Rathangan and Newbridge and areas of pastures (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational amenity infrastructure, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme as it aligns more along existing infrastructure (Grand Canal) and would require less land-take (from agriculture).</p>	2	1
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Triogue, River Barrow and the River Liffey. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Triogue, River Barrow, Grand Canal, Cloncumber Stream and the River Liffey. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Portlaoise and Newbridge. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option A, given it links larger population centres, will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	1	2

SEA Theme	Summary of the Potential Effects Associated with Corridor 60 Portlaoise to Newbridge	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a fulacht fia (KD022-111----) and a mound (KD023-059----). The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 11901602) and a standing stone (KD017-049----). Given a part of the proposed corridor is located along a canal (Grand Canal), sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme, as it aligns along existing infrastructure (greenway / Grand Canal) and would rejuvenation and connect cultural heritage assets along this route.</p>	2	1
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

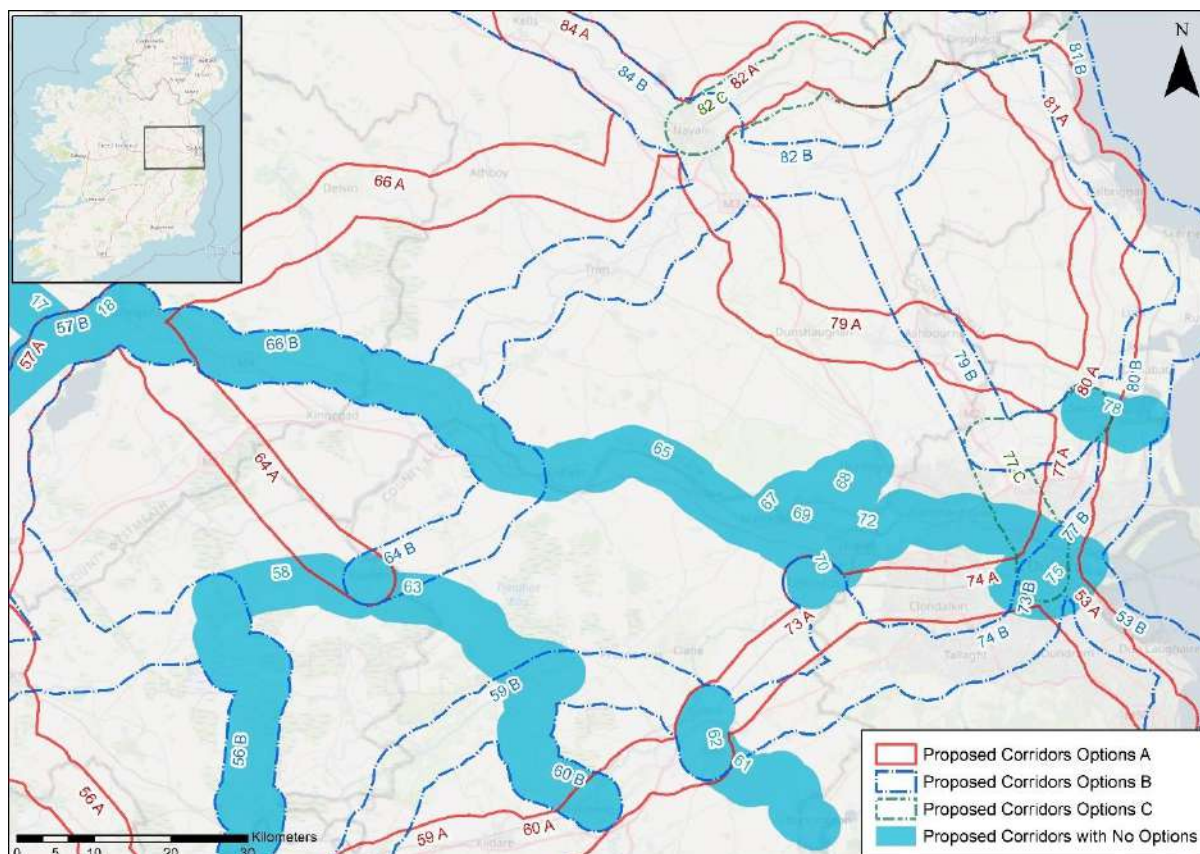


Figure B17: Map of corridor options 61, 62, 63 and 64

Table 61. Appraisal Relating to Corridor 61 Nass to Blessington

SEA Theme	Summary of the Potential Effects Associated with Corridor 61 Nass to Blessington	Impact
<b>Biodiversity</b>	<p>The Grand Canal pNHA, Red Bog, Kildare SAC and pNHA, and the Poulaphouca Reservoir SPA and pNHA are located within the corridor. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Naas (population c.21,400) with Blessington (population c.5,520). The corridor would support an enhancement of accessibility to services and facilities to the two communities by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Naas and Blessington and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and coniferous forests (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Liffey and the River Morell. The WFD status of these watercourses ranges between 'good' and 'moderate' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Naas and Blessington. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the</p>	<b>Positive</b>

SEA Theme	Summary of the Potential Effects Associated with Corridor 61 Nass to Blessington	Impact
	delivery of the corridor supports the resilience of the local area to the potential effects of climate change.	
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a ritual site (KD019-031----) and a ringfort (WI005-012----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 62. Appraisal Relating to Corridor 62 Naas to Sallins**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 62 Naas to Sallins</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>The route runs between Naas and Sallins and follows the Grand Canal pNHA. Key sensitivities associated with this designation would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure such as roads where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Naas (population c.21,400) with Sallins (population c.5,850). The corridor would support an enhancement of accessibility to services and facilities in Naas from Sallins by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Naas and Sallins and areas of pastures (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational walking amenity infrastructure (Grand Canal), loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>A watercourse occurs along the route of the proposed corridor, the River Liffey. The WFD status of this watercourse is 'good' during the 2013-2018 monitoring period.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Naas and Sallins. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a lock (Reg. No. 11814133) and a house (Reg. No. 11811026).</p> <p>Given a part of the proposed corridor is located along a canal (Grand Canal), sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>



**Table 63. Appraisal Relating to Corridor 63 Edenderry to Newbridge**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 63 Edenderry to Naas</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>The corridor traverses the Grand Canal pNHA, The Long Derries, Edenderry SAC and pNHA, Pollardstown Fen SAC and pNHA, and Mouds Bog SAC and pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads and cycleways (for example the Grand Canal Greenway) where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Naas (population c.21,400) with Edenderry (population c.3,760). The corridor would support an enhancement of accessibility to services and facilities to the two communities by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Edenderry, Sallins and Naas and areas of pastures (agricultural areas), peat bogs (wetland), non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational walking amenity infrastructure (Grand Canal), loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Boyne, River Figile, Grand Canal, River Slate and the River Liffey. The WFD status of these watercourses ranges between 'moderate' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Edenderry and Naas. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a milestone post (Reg. No. 14912010) and a ring ditch (KD019-081----).</p> <p>Given a part of the proposed corridor is located along a canal (Grand Canal), sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

Table 64. Appraisal Relating to Corridor 64 Mullingar to Edenderry

SEA Theme	Summary of the Potential Effects Associated with Corridor 64 Mullingar to Edenderry	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> Designated sites located within the corridor include the Royal Canal Greenway pNHA, Black Castle Bog NHA, and Milltownpass Bog NHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage however the route corridor occurs within predominately greenfield areas and would traverse several fields.</p> <p><b>Option B:</b> A section of the corridor between Mullingar and Kilmore is adjacent to the Royal Canal Greenway pNHA. Other designated sites within the corridor include Wooddown Bog SAC and NHA, Mount Hevey Bog SAC and pNHA, Molerick Bog NHA, Ballina Bog pNHA, Carbury Bog NHA, and River Boyne and River Blackwater SAC. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads and cycleways (for example the Royal Canal Greenway) where practicable.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Mullingar (population c.21,400) with Edenderry (population c.7,360).</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p>	=	=
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Mullingar and Edenderry and areas of pastures (agricultural areas), peat bogs (wetland), non-irrigated arable land (agricultural areas) and forest and semi-natural areas (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Mullingar and Edenderry and areas of pastures (agricultural areas), peat bogs (wetland), non-irrigated arable land (agricultural areas) and forest and semi-natural areas (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational walking amenity infrastructure / rail line, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Milltown River, Monagh River and the Yellow River. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Brosna, Royal Canal, River Deel, River Boyne. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A and B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Mullingar and Edenderry. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 64 Mullingar to Edenderry	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as ringforts (WM026-021----) and (WM026-034----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 15402712), house (Reg. No. 11900302) and enclosure (KD003-047---).</p> <p>Given a part of the proposed corridor is located along a canal (Royal Canal) and a rail line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme, as it aligns along existing infrastructure (Royal Canal) and would rejuvenation and connect cultural heritage assets along this cultural heritage asset.</p>	2	1
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

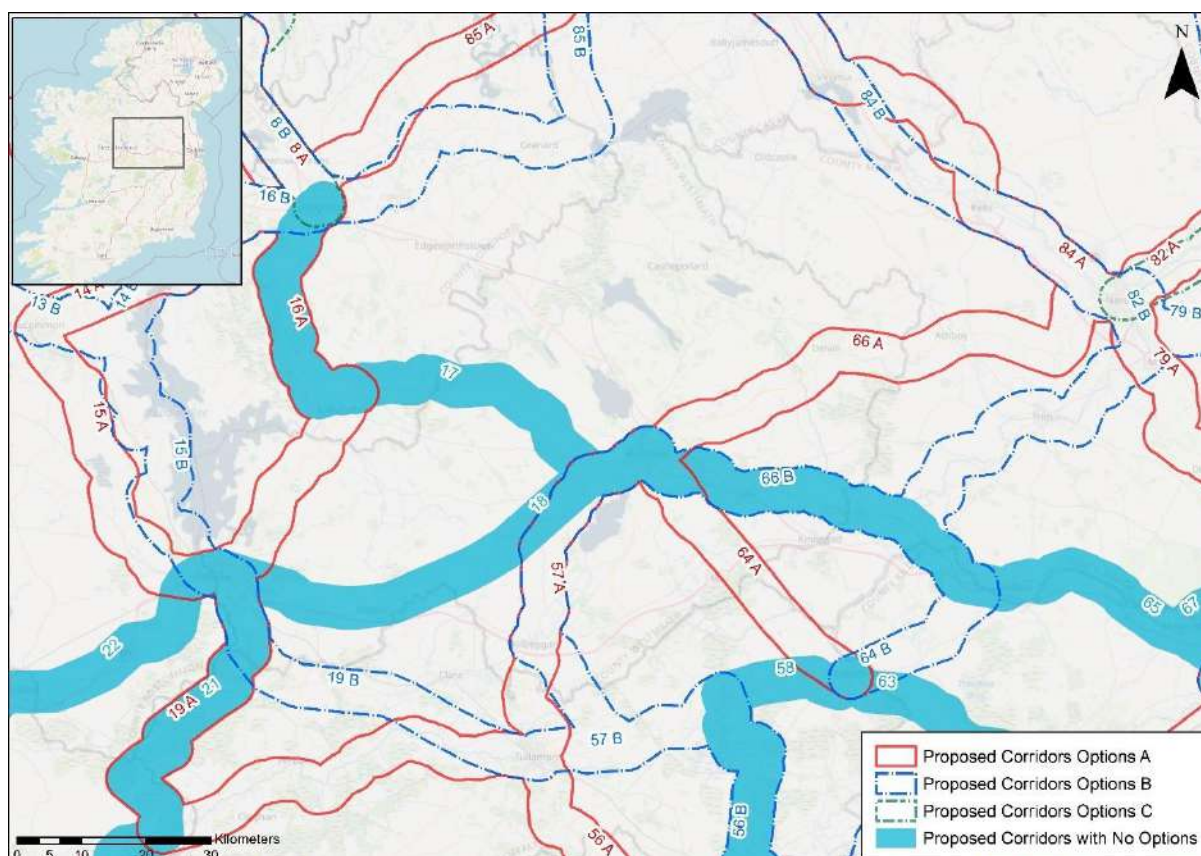


Figure B18: Map of corridor options 65 and 66

Table 65. Appraisal Relating to Corridor 65 Mullingar to Maynooth

SEA Theme	Summary of the Potential Effects Associated with Corridor 65 Mullingar to Maynooth	Impact
<b>Biodiversity</b>	<p>The corridor traverses the Royal Canal Greenway pNHA, Wooddown Bog SAC and NHA, Mount Hevey Bog SAC and pNHA, Molerick Bog NHA, Ballina Bog pNHA, River Boyne and River Blackwater SAC. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure such as roads and cycleways (for example the Royal Canal Greenway) where practicable. The corridor follows the Royal Canal for the majority of the route.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Mullingar (population c.21,400) with Maynooth (population c. 14,585) via Longwood (population c.1,580), Enfield (population c.3,239) and Kilcock (population c. 6,093).</p> <p>The corridor would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Mullingar, Enfield, Kilcock and Maynooth and areas of pastures (agricultural areas), peat bogs (wetland), non-irrigated arable land (agricultural areas) and forest and semi-natural areas (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational walking amenity infrastructure (Royal Canal), loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Brosna, River Boyne, River Blackwater and the Royal Canal. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Mullingar and Maynooth. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>

SEA Theme	Summary of the Potential Effects Associated with Corridor 65 Mullingar to Maynooth	Impact
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively / positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a castle (WM019-076----), bridge (Reg. No. 11900303) and a ring ditch (KD005-003----) and a barrow (KD005-033----).</p> <p>Given a part of the proposed corridor is located along a canal (Royal Canal), sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

Table 66. Appraisal Relating to Corridor 66 Navan to Mullingar

SEA Theme	Summary of the Potential Effects Associated with Corridor 66 Navan to Mullingar	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> The corridor traverses the Lough Sheever Fen/Slevin's Lough Complex pNHA, Wooddown Bog SAC and pNHA, Royal Canal pNHA, and River Boyne and River Blackwater SAC and SPA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads where practicable; the route may also traverse sections of greenfield.</p> <p><b>Option B:</b> The corridor traverses the Royal Canal pNHA, Wooddown Bog SAC and NHA, Mount Hevey Bog SAC and pNHA, Molerick Bog NHA, River Boyne and River Blackwater SAC and SPA, Trim pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads and cycleways (for example the Royal Canal Greenway) where practicable; the route may also traverse sections of greenfield.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Navan (population c.30,170) with Mullingar (population c.21,400). <b>Option A</b> would also link Athboy (population c.2,450), and <b>Option B</b> would also link Trim (population c.9,190).</p> <p>The options will support accessibility to the services, facilities and amenities and job opportunities available in these settlements. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the routes and support community vitality.</p>	=	=
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Navan, Athboy and Mullingar and areas of pastures (agricultural areas), peat bogs (wetland), non-irrigated arable (agricultural areas) and forest and semi-natural areas (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Mullingar, Trim and Navan and areas of pastures (agricultural areas), peat bogs (wetland), non-irrigated arable (agricultural areas) and forest and semi-natural areas (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational walking amenity infrastructure (Royal Canal and the River Boyne), loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Brosna, River Deel and the River Athboy. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Brosna, River Deel, River Boyne and the River Clady. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Mullingar and Navan. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively / positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 66 Navan to Mullingar	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a stone head (WM013-060002-) and a barrow WM014-007----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 15402651), bridge (Reg. No. 14404704) and a castle (ME041-008---).</p> <p>Given a part of the proposed corridor is located along a canal (Royal Canal) and the River Boyne, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme, as it aligns along existing infrastructure (Royal Canal) and would rejuvenation and connect cultural heritage assets along this cultural heritage asset.</p>	2	1
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

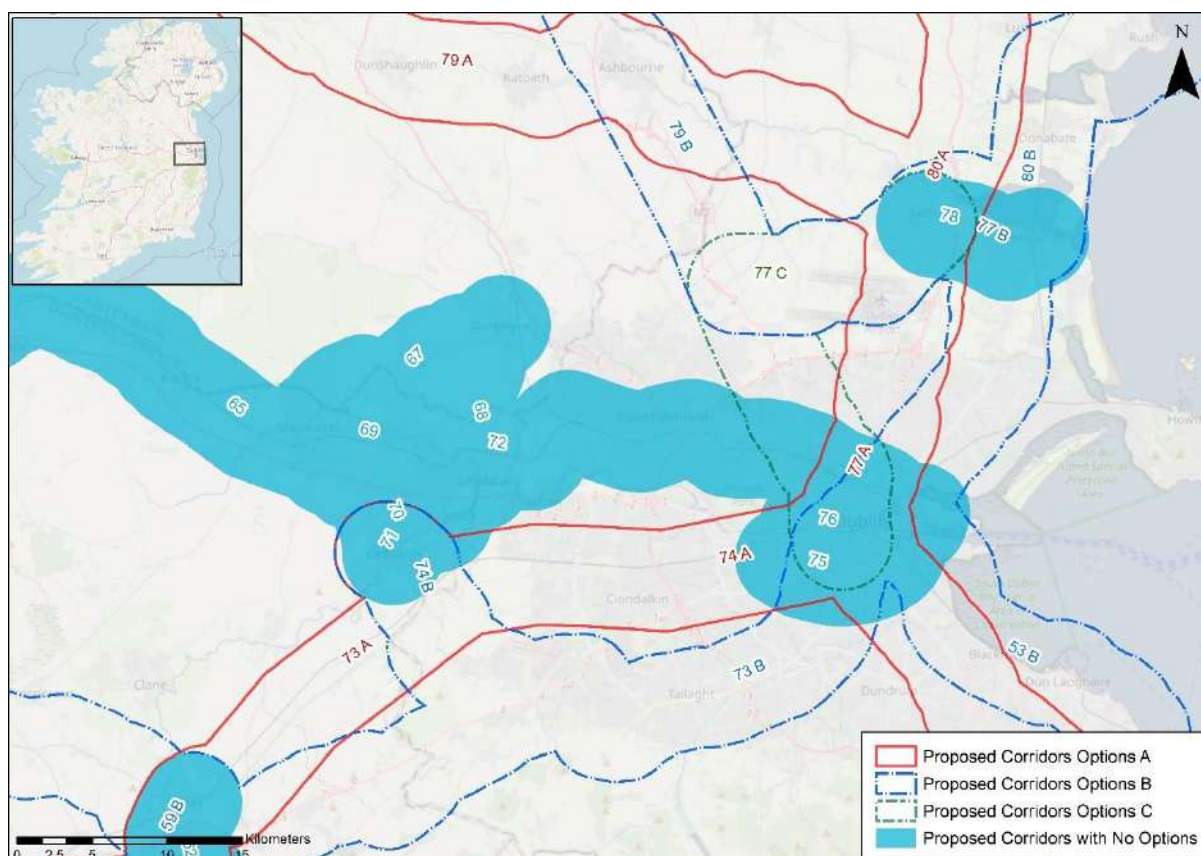


Figure B19: Map of corridor options 67, 68 and 69

Table 67. Appraisal Relating to Corridor 67 Dunboyncne to Maynooth

SEA Theme	Summary of the Potential Effects Associated with Corridor 67 Dunboyncne to Maynooth	Impact
<b>Biodiversity</b>	<p>This corridor links Dunboyncne and Maynooth and passes, the Rye Water Valley/Carton SAC and pNHA is located within the corridor. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Maynooth (population c.14,585) with Dunboyncne (population c.7,270).</p> <p>The corridor would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Maynooth, Leixlip and Dunboyncne and areas of pastures (agricultural areas) and non-irrigated arable (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road space / recreational walking amenity infrastructure (Royal Canal), loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Lyreen and the Dunboyncne Stream. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Maynooth and Dunboyncne. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p>	<b>Positive</b>



SEA Theme	Summary of the Potential Effects Associated with Corridor 67 Dunboyne to Maynooth	Impact
	<p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a church (KD006-007001-) and an enclosure (ME050-048005-).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 68. Appraisal Relating to Corridor 68 Dunboyne to Leixlip**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 68 Dunboyne to Leixlip</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>This corridor links Dunboyne and Leixlip and traverses the Royal Canal pNHA, Liffey Valley pNHA, and Rye Water Valley / Carton SAC and pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Dunboyne (population c.7,270) with Leixlip (population c.15,500). The corridor would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Leixlip and Dunboyne and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Rye, River Liffey and the Dunboyne Stream. The WFD status of these watercourses ranges between 'moderate' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor range from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Leixlip and Dunboyne. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively / positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a house (Reg. No. 11804074), demesne / walls (Reg. No. 14341017) and a castle (ME050-021007-).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 69. Appraisal Relating to Corridor 69 Maynooth to Leixlip**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 69 Maynooth to Leixlip</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>This corridor links Maynooth and Leixlip and traverses the Royal Canal pNHA, and Rye Water Valley/Cartron SAC and pNHA. These designated sites and key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads and cycleways (for example the Royal Canal Greenway) where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Maynooth (population c.14,585) with Leixlip (population c.15,500). The corridor would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Leixlip and Maynooth and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road / recreational walking amenity infrastructure (Royal Canal), loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Lyreen, River Rye and the Royal Canal. The WFD status of these watercourses ranges between 'moderate' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Leixlip and Maynooth. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively / positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 11803133), Ogham stone (KD006-005002-) and a bridge (Reg. No. 1190060).</p> <p>Given a part of the proposed corridor is located along a canal (Royal Canal), sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

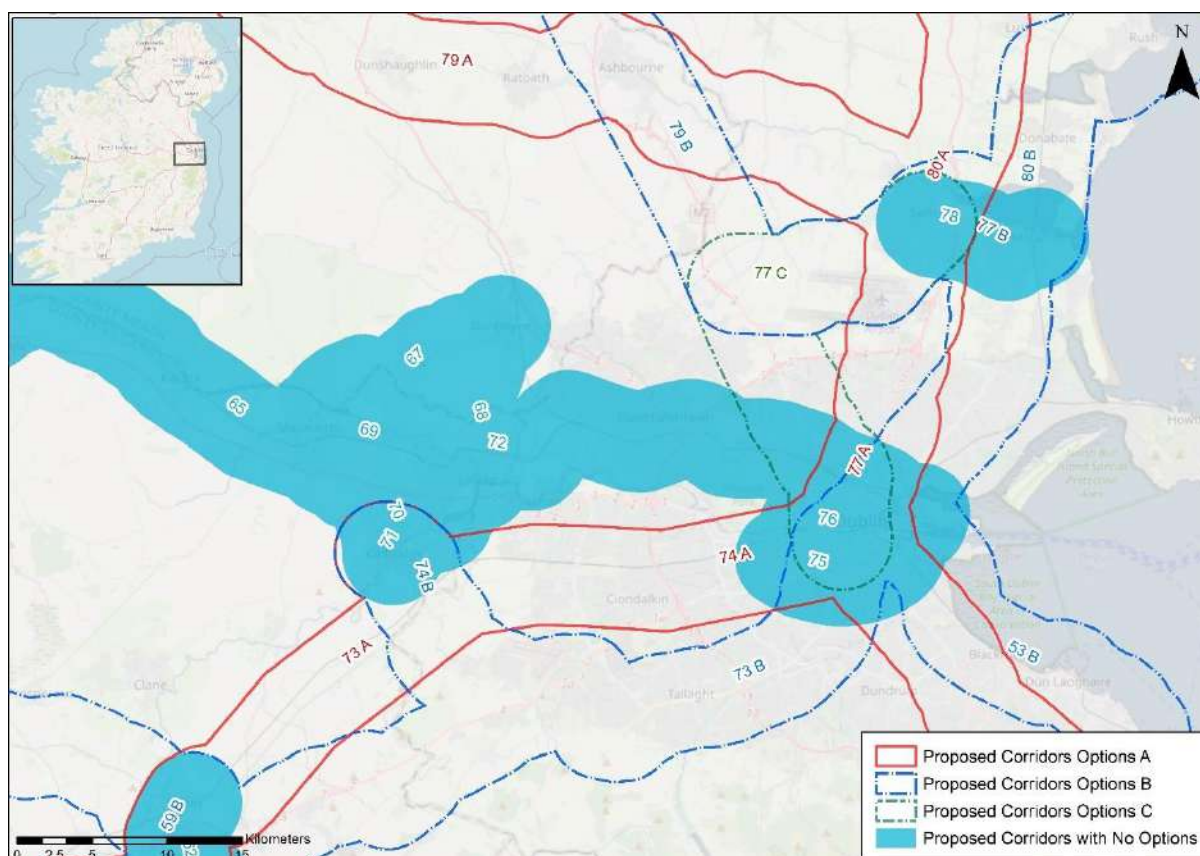


Figure B20: Map of corridor options 70, 71 and 72

Table 70. Appraisal Relating to Corridor 70 Maynooth to Celbridge

SEA Theme	Summary of the Potential Effects Associated with Corridor 70 Maynooth to Celbridge	Impact
<b>Biodiversity</b>	This corridor links Maynooth and Celbridge and crosses the Royal Canal pNHA near Maynooth. This designated site and the key sensitivities associated with the designation would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads where practicable.	<b>Uncertain</b>
<b>Population and Human Health</b>	The corridor would link Maynooth (population c.14,585) with Celbridge (population c.20,290). The corridor would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.	<b>Positive</b>
<b>Land and Soils</b>	Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Maynooth and Celbridge and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018. Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.	<b>Uncertain</b>
<b>Water</b>	Several watercourses occur along the route of the proposed corridor, including the River Lyreen and the River Liffey. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.	<b>Uncertain</b>
<b>Air Quality</b>	The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Maynooth and Celbridge. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.	<b>Positive</b>

SEA Theme	Summary of the Potential Effects Associated with Corridor 70 Maynooth to Celbridge	Impact
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively / positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as an architectural feature (KD005-014---) and a gate lodge (Reg. No. 11805002).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 71. Appraisal Relating to Corridor 71 Leixlip to Celbridge**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 71 Leixlip to Celbridge</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>The corridor connects Leixlip and Celbridge. The corridor encompasses the Royal Canal pNHA and the Rye Water Valley/Cartron SAC and pNHA near Leixlip. These designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads where practicable. The corridor may also traverse areas of greenfield.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Leixlip (population c.15,500) with Celbridge (population c.20,290). The corridor would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Leixlip and Celbridge and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Lyreen and the River Liffey. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Leixlip and Celbridge. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively / positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a fulacht fia (KD011-062----) and a burial mound (KD011-060----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 72. Appraisal Relating to Corridor 72 Dublin to Leixlip**

SEA Theme	Summary of the Potential Effects Associated with Corridor 72 Dublin to Leixlip	Impact
<b>Biodiversity</b>	<p>The corridor follows the route of the Royal Canal pNHA, between Spencer Dock and Leixlip and crosses the Rye Water Valley/Cartron SAC and pNHA at Leixlip. The corridor also includes the Liffey Valley pNHA, South Dublin Bay and River Tolka Estuary SPA, and North Dublin Bay pNHA. These designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as cycleways where practicable (for example the Royal Canal Greenway which is located along the route of the corridor).</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Dublin with Leixlip (population c.15,500), supporting accessibility via active modes of travels for the Dublin communities located along the route. As such, the corridor will support accessibility to the services, facilities and amenities and job opportunities available in Dublin. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Leixlip and Dublin City and Suburbs and areas of pastures (agricultural areas) outside of Dublin as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road / recreational walking amenity (Royal Canal) in an urban area, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Rye, River Liffey and the Royal Canal. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Leixlip and Dublin City and Suburbs. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a fulacht fia (KD011-053----), ring ditch (DU013-047----) and a lock (DU013-047----).</p> <p>Given a part of the proposed corridor is located along a canal (Royal Canal), sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

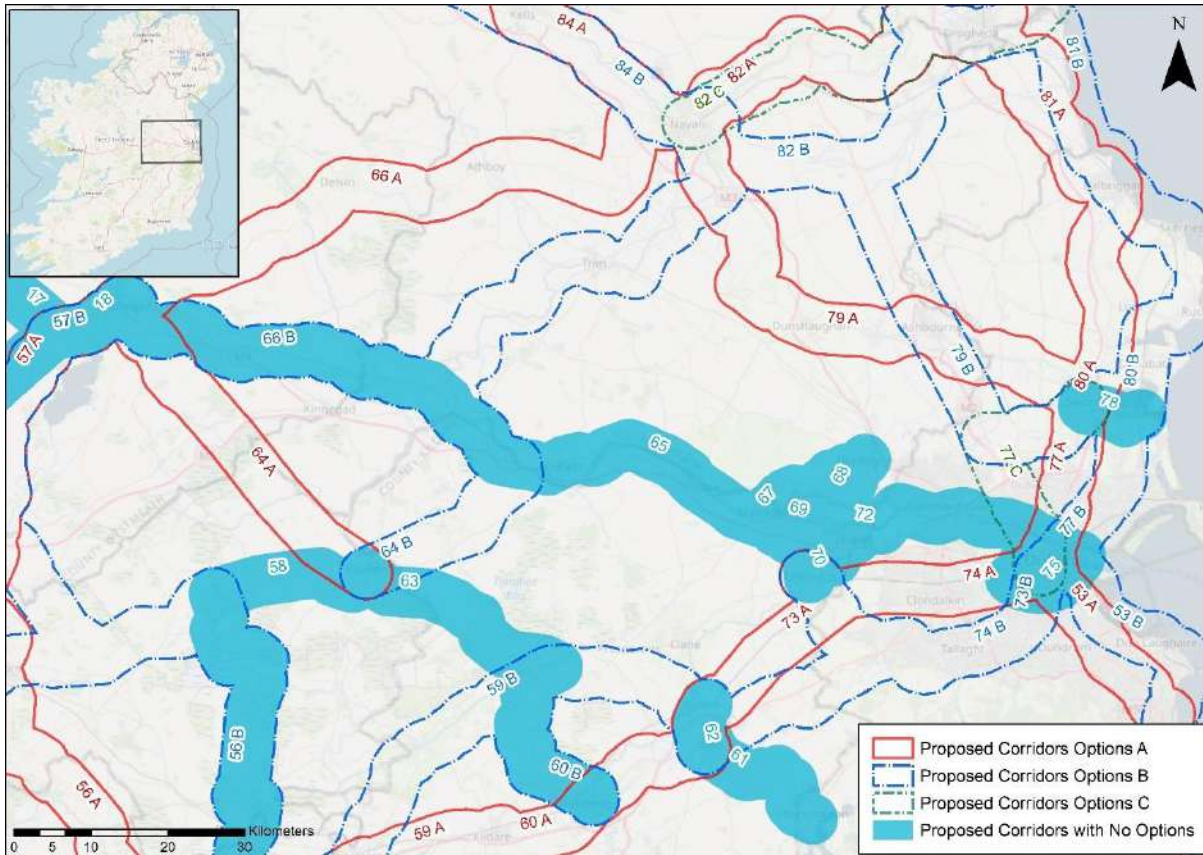


Figure B21: Map of corridor options 73, 74 and 75

Table 73. Appraisal Relating to Corridor 73 Naas to Dublin

SEA Theme	Summary of the Potential Effects Associated with Corridor 73 Naas to Dublin	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> The corridor option runs along the route of the Grand Canal pNHA. No other designated sites are located in the vicinity the corridor. The designated site and the key sensitivities associated with the designation would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as cycleways where practicable (for example the Grand Canal Greenway which is located along the route of the corridor).</p> <p><b>Option B:</b> The corridor includes the Grand Canal pNHA, Killeel Wood pNHA, Lugmore Glen pNHA, and Dodder Valley pNHA. The corridor crosses the Grand Canal pNHA near Harold’s Cross. The designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads and cycleways where practicable.</p>	=	=
<b>Population and Human Health</b>	<p>The two options would link Naas (population c.21,400) with Dublin, supporting accessibility via active modes of travels for the communities located along the routes (including those in the Dublin suburbs). As such, the options will support accessibility to the services, facilities and amenities and job opportunities available in Dublin and to and from the communities along the route. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing.</p> <p>Option B will also link Kill (population c.3,348) and a number of smaller settlements, whilst Option A will also provide links for Sallins (population c.5,850).</p> <p>The tourism potential of the corridor has the potential to be better realised through the use of the Grand Canal through Option A.</p>	=	=



SEA Theme	Summary of the Potential Effects Associated with Corridor 73 Naas to Dublin	Option	
		A	B
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Naas and Dublin City and Suburbs and areas of pastures (agricultural areas) outside of Dublin as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road / recreational amenity infrastructure, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Naas and Dublin City and Suburbs and areas of pastures (agricultural areas) outside of Dublin as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road in an urban area, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Liffey, River Morell, River Camac, River Poddle and the Grand Canal. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Liffey, River Morell, Kill River, River Camac, River Dodder and the Grand Canal. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Naas and Dublin City and Suburbs. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a house (Reg. No. 11811026), bridge (Reg. No. 119014060 and an outbuilding (Reg. No. 11204058).</p> <p>Given a part of the proposed corridor is located along a canal (Grand Canal), sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a standing stone (KD019-059----), habitation site (KD020-027----) and a house (Reg. No. 11217003).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p>Option A is likely to perform more favourably in relation to this SEA theme, as it aligns along existing infrastructure (Royal Canal) and would rejuvenation and connect cultural heritage assets along this route.</p>	1	2
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

Table 74. Appraisal Relating to Corridor 74 Celbridge to Dublin

SEA Theme	Summary of the Potential Effects Associated with Corridor 74 Celbridge to Dublin	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> The corridor option runs along the route of the Grand Canal pNHA. No other designated sites are located within the corridor. The designated site and the key sensitivities associated with the designation would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as cycleways where practicable (for example the Grand Canal Greenway which is located along a section of the route of the corridor).</p> <p><b>Option B:</b> The corridor option includes Grand Canal pNHA, Lugmore Glen pNHA, and Dodder Valley pNHA. The corridor crosses the Grand Canal pNHA near Harold's Cross and at Straleek. The designated sites and the key sensitivities associated with the designation would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads where practicable.</p>	=	=
<b>Population and Human Health</b>	<p>The two options would link Celbridge (population c.20,290) with Dublin, supporting accessibility via active modes of travels for the communities located along the routes (including those in the Dublin suburbs). As such, the options will support accessibility to the services, facilities and amenities and job opportunities available in Dublin and to and from the communities along the route. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing.</p> <p>Option B will also link Newcastle (population c.3,090), whilst Option A will utilise the Grand Canal.</p> <p>The tourism potential of the corridor has the potential to be better realised through the use of the Grand Canal through Option A.</p>	1	2
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Celbridge and Dublin City and Suburbs and areas of pastures (agricultural areas) outside of Dublin as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road / recreational amenity infrastructure (Grand Canal), loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Celbridge, Saggart and Dublin City and Suburbs and areas of pastures (agricultural areas) outside of Dublin as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road in an urban area, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Option A is likely to perform more favourably in relation to this SEA theme as it aligns more along existing infrastructure (Grand Canal) and would require less land-take (from agriculture).</p>	1	2
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Liffey, River Camac and the Grand Canal. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Liffey, River Camac, River Dodder and the Grand Canal. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Celbridge and Dublin City and Suburbs. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 74 Celbridge to Dublin	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 11207002) and (Reg. No. 11204052).</p> <p>Given a part of the proposed corridor is located along a canal (Grand Canal), sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 11207002), ringfort (DU020-002----) and a habitation site (DU021-023----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p>Option A is likely to perform more favourably in relation to this SEA theme, as it aligns along existing infrastructure (Royal Canal) and would rejuvenation and connect cultural heritage assets along this route.</p>	1	2
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

**Table 75. Appraisal Relating to Corridor 75 Grand Canal Greenway**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 75 Grand Canal Greenway</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>The corridor runs along the route of the Grand Canal pNHA from Hanover Quay to near Rialto. No other designated sites are located within the corridor. The designated site and the key sensitivities associated with the designation would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as along existing roads where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link Dublin with the west along the Grand Canal, supporting accessibility via active modes of travels for the communities located along the route (including in the Dublin suburbs). As such, the corridor will support accessibility to the services, facilities and amenities and job opportunities available in Dublin and neighbourhoods along the corridor. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing.</p> <p>The use of the Grand Canal as a greenway will support the tourism potential of the area and bring benefits for the visitor economy.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is primarily urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Dublin City, as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road / recreational walking amenity infrastructure (Grand Canal) in an urban area, loss of land and loss of productive agricultural land is very unlikely.</p>	<b>Uncertain</b>
<b>Water</b>	<p>The Grand Canal is along the route of the proposed corridor. There is no WFD status for the Grand Canal.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route in Dublin City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a bridge (Reg. No. 50080203) and lock (Reg. No. 50100595).</p> <p>Given a part of the proposed corridor is located along the canal (Grand Canal), sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of these heritage assets.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

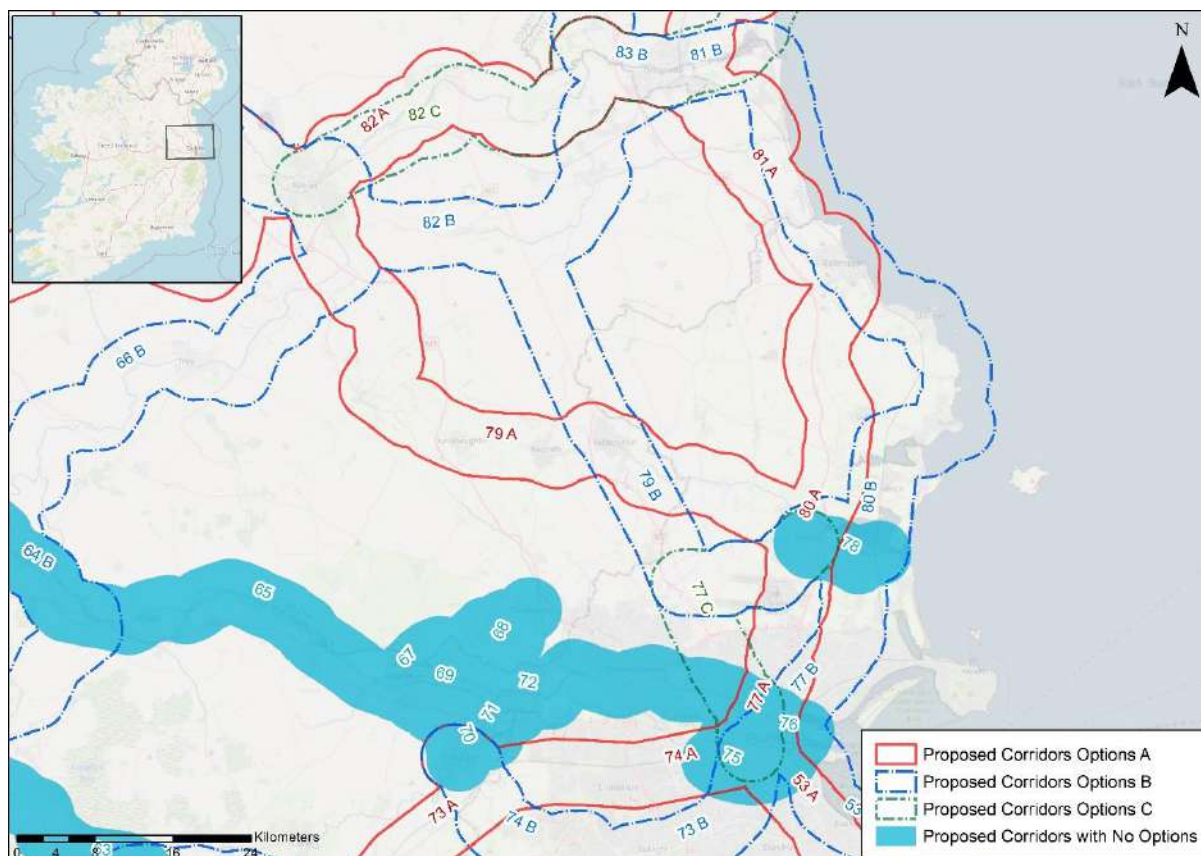


Figure B22: Map of corridor options 76, 77 and 78

Table 76. Appraisal Relating to Corridor 76 Dublin Port to Heuston Station via Connolly Station

SEA Theme	Summary of the Potential Effects Associated with Corridor 76 Dublin Port to Heuston Station via Connolly Station	Impact
<b>Biodiversity</b>	<p>The corridor links Dublin Port to Heuston Station, through the IFSC. The corridor crosses the Royal Canal pNHA near Spencer Dock. South Dublin Bay and River Tolka Estuary SPA and North Dublin Bay pNHA occur within the corridor. The designated sites and the key sensitivities associated with the designation would need to be considered further when determining the final route during scheme development.</p> <p>Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure such as along existing roads where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor would link key city transport nodes and employment centres in Dublin, including Heuston railway station, Connolly railway station, the IFSC and Dublin Port along the River Liffey.</p> <p>This will support accessibility via active modes of travels to these important transport nodes and provide a key city centre link for cyclists.</p> <p>These linkages and the use of the River Liffey corridor will also support sustainable tourism and bring benefits for the visitor economy.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is primarily urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Dublin City as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road in an urban area, loss of land and loss of productive agricultural land is very unlikely.</p>	<b>Uncertain</b>
<b>Water</b>	<p>The River Liffey is along the route of the proposed corridor. There WFD status of the River Liffey is 'good' and 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route in Dublin City. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the</p>	<b>Positive</b>

SEA Theme	Summary of the Potential Effects Associated with Corridor 76 Dublin Port to Heuston Station via Connolly Station	Impact
	delivery of the corridor supports the resilience of the local area to the potential effects of climate change.	
<b>Cultural Heritage</b>	A range of cultural heritage assets are present within the proposed corridor, such as a Quay (Reg. No. 50060352), sea wall (DU018-020505-) and a water tower (Reg. No. 50120264). The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets in the City.	<b>Uncertain</b>
<b>Landscape</b>	The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.  More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.	<b>Positive</b>

Table 77. Appraisal Relating to Corridor 77 Swords to Dublin

SEA Theme	Summary of the Potential Effects Associated with Corridor 77 Swords to Dublin	Option		
		A	B	C
<b>Biodiversity</b>	<p><b>Option A</b> crosses the Royal Canal pNHA at Drumcondra. Santry Demesne pNHA and Malahide Estuary SAC, SPA and pNHA are located within the corridor.</p> <p><b>Option B</b> crosses the Royal Canal pNHA at Seville Place. South Dublin Bay and River Tolka Estuary SPA, North Dublin Bay pNHA, Sluice River Marsh pNHA, Feltrim Hill pNHA, and Malahide Estuary SAC, SPA and pNHA are located within the corridor.</p> <p><b>Option C</b> crosses Royal Canal pNHA at Phibsborough. Malahide Estuary SAC, SPA and pNHA is located within the corridor.</p> <p>The designated sites and the key sensitivities associated with the designation would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however it is anticipated that all routes would utilise existing infrastructure such as along existing roads where practicable. Option C could potentially traverse some greenfield areas where infrastructure is not available.</p>	=	=	2
<b>Population and Human Health</b>	<p>The two options would link Swords (population c.39,250) with Dublin, supporting accessibility via active modes of travels for the communities located along the routes (including those in the Dublin suburbs). As such, the options will support accessibility to the services, facilities and amenities and job opportunities available in Dublin and to and from the communities along the route. In this respect an enhancement of accessibility by active travel modes will promote social inclusion and the quality of life of residents and support health and wellbeing. In terms of the differences between the options, Option A will support a more direct sustainable transport link to Dublin Airport from Dublin City centre, whilst Option B will provide a link with Malahide (population c.16,550).</p>	=	=	=
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is primarily urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Swords, Dublin Airport and Dublin City and Suburbs and areas of pastures (agricultural areas) in North Dublin, as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road in an urban area, loss of land and loss of productive agricultural land is unlikely.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is primarily urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Swords, Malahide and Dublin City and Suburbs and areas of pastures (agricultural areas) in North Dublin, as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road in an urban area, loss of land and loss of productive agricultural land is unlikely.</p> <p><b>Option C:</b> Land use along the proposed corridor / within the area is primarily urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Swords and Dublin City and Suburbs.</p> <p>Should the route primarily involve the reallocation of road in an urban area, loss of land and loss of productive agricultural land is unlikely.</p>	=	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Liffey, Tolka River, Sluice River and the Mayne River. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Liffey, Royal Canal, Tolka Estuary, Santry River, Mayne River and the Gaybrooks Stream. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option C:</b> Several watercourses occur along the route of the proposed corridor, including the River Liffey, Tolka River and the River Ward. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B &amp; C:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Swords and Dublin City and Suburbs. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively / positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 77 Swords to Dublin	Option		
		A	B	C
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a house (Reg. No. 11349004) and a structure (DU011-154----).</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a statue (Reg. No. 50120134) and a bridge (DU018-006----).</p> <p><b>Option C:</b> A range of cultural heritage assets are present within the proposed corridor, such as a habitation site (DU018-020833-) and a bridge (DU018-002----).</p> <p>The development of these cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along these proposed corridors.</p>	=	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=	=



**Table 78. Appraisal Relating to Corridor 78 Swords to Malahide**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 78 Swords to Malahide</b>	<b>Impact</b>
<b>Biodiversity</b>	<p>The corridor links Swords and Malahide. Feltrim Hill pNHA, and Malahide Estuary SAC, SPA and pNHA are located within the vicinity of the corridor.</p> <p>The designated sites and the key sensitivities associated with the designation would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure such as roads where practicable.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor will link Swords (population c.39,250) and Malahide (population c.16,550). The corridor would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is primarily urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Swords and Malahide and areas of complex cultivation patterns (agricultural areas), along the coastline, as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the River Liffey, Royal Canal, Tolka River, Santry River, Mayne River and the Gaybrooks Stream. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Swords and Malahide. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a gate lodge (Reg. No. 11344044) and a school building (Reg. No. 11344018).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

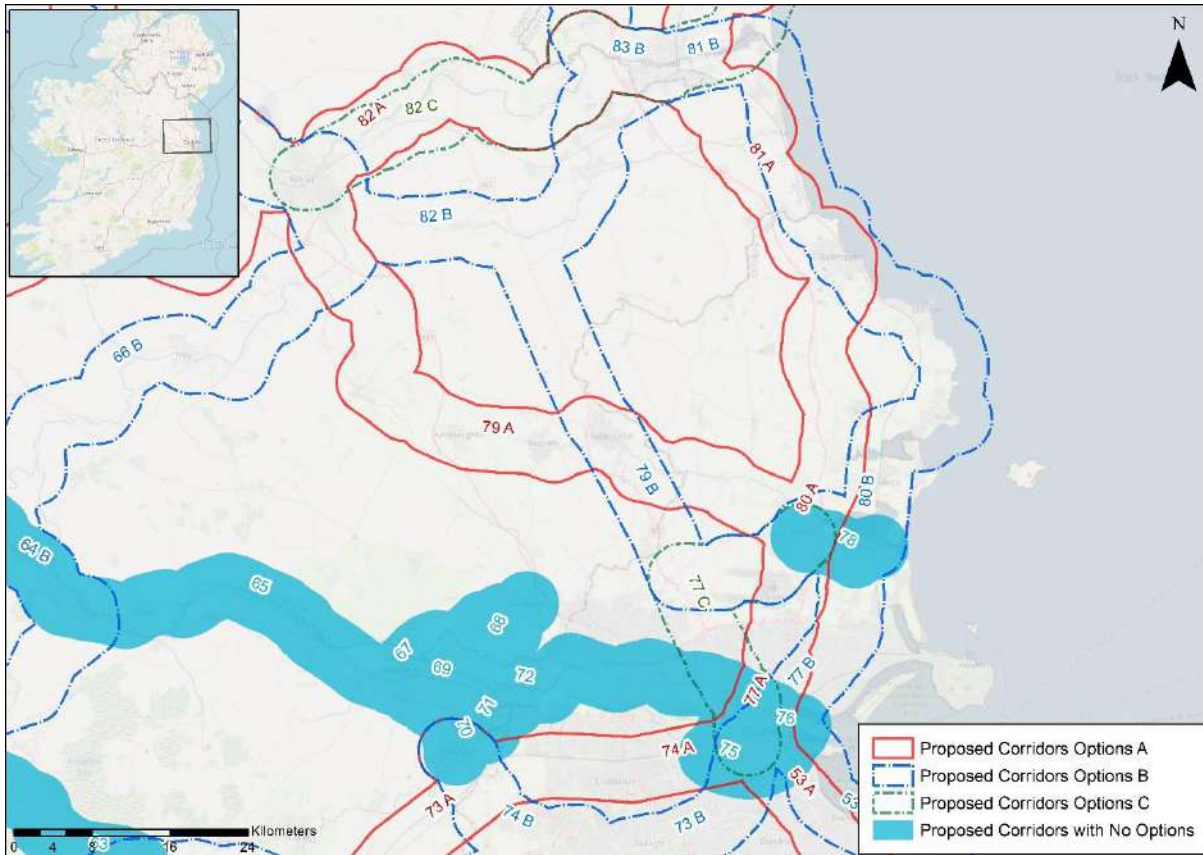


Figure B23: Map of corridor options 79, 80, 81 and 82

Table 79. Appraisal Relating to Corridor 79 Navan to Swords

SEA Theme	Summary of the Potential Effects Associated with Corridor 79 Navan to Swords	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> The corridor follows River Boyne and River Blackwater SAC and SPA from Navan to Malahide Estuary SAC, SPA and pNHA. The Balrath and Woods pNHA is also located within the corridor option.</p> <p>The designated sites and the key sensitivities associated with these designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads.</p> <p><b>Option B:</b> The corridor follows the River Boyne and River Blackwater SAC and SPA from Navan to near Castletown Tara and Balreask Old, where the route crosses the designated site. The Malahide Estuary SAC, SPA and pNHA, Balrath and Woods pNHA are also located within the corridor.</p> <p>The designated sites and the key sensitivities associated with the designation would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads where practicable.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Navan (population c.30,170) with Swords (population c.39,250). <b>Option A</b> would link the two towns via Dunshaughlin (population c.4,035), Ratoath (population c.9,530) and Ashbourne (population c.12,680), whilst <b>Option B</b> would link the two towns via Kentstown (population c.1,179).</p> <p>The corridor options would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p> <p>Given the option links more communities with larger populations, Option A is likely to perform more favourably than Option B in relation to this SEA theme.</p>	1	2

SEA Theme	Summary of the Potential Effects Associated with Corridor 79 Navan to Swords	Option	
		A	B
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Navan, Kentstown, Ashbourne and Swords and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Navan, Dunshaughlin, Ratoath, Ashbourne and Swords and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Boyne, River Skane and the Broadmeadow River. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Boyne, River Nanny, Hurley River, Broadmeadow River, River Ward and the River Sluice. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Navan and Swords. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option A, given it links more communities with larger populations, will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	1	2
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a church (ME025-036---) and a field system (ME044-052---).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a font (ME025-041001-0) and an enclosure (ME032-090---).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

Table 80. Appraisal Relating to Corridor 80 Balbriggan to Swords

SEA Theme	Summary of the Potential Effects Associated with Corridor 80 Balbriggan to Swords	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> Within the corridor there are two SACs, two SPAs and four pNHA/NHAs. These include the Malahide Estuary SAC, SPA and pNHA, Rogerstown Estuary SAC, SPA and pNHA, Bog of the Ring pNHA and the Knock Lake pNHA. These designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads where practicable.</p> <p><b>Option B:</b> Within the corridor there are three SACs, three SPAs, and four pNHA/NHAs. These include the Malahide Estuary SAC, SPA and pNHA, Rogerstown Estuary SAC, SPA and pNHA, Bog of the Ring pNHA and the Knock Lake pNHA. These designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads and cycleways where practicable. Option B would also traverse areas of greenfield.</p>	1	2
<b>Population and Human Health</b>	<p>The corridor options would link Balbriggan (population c.21,720) with Swords (population c.39,250). Option A would link the two towns with Balrothery (population c.2,020), whilst Option B would link the two towns along the coast via Skerries (population c.10,043), Rush (population c.9,940) and Donabate (population c.7,440) and Malahide (population c.16,550).</p> <p>The corridor options would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p> <p>Given Option B links more communities with larger populations, the option is likely to perform better than Option A in relation to this SEA theme. Option B, given it follows the coast also offers additional potential relating to tourism and the visitor economy.</p>	2	1
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Balbriggan, Coldwinters and Swords and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Balbriggan, Skerries, Rush, Malahide and Swords and areas of pastures (agricultural areas), intertidal flats (wetlands), and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p> <p>Option A is likely to perform more favourably in relation to this SEA theme as it aligns more along existing road infrastructure and would require less land-take (from agriculture).</p>	1	2
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Matt River, Ballough Stream, Broadmeadow River and the Ward River. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the Matt River, Mill Stream, Rogerstown Estuary, Malahide Estuary and the Gaybrook Stream. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Balbriggan and Swords. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option B, given it links more communities with larger populations, will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	2	1

SEA Theme	Summary of the Potential Effects Associated with Corridor 80 Balbriggan to Swords	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a watermill (DU005-050---) and a burial (DU008-023----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a pit (DU005-200----) and a ritual site (DU008-022----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

Table 81. Appraisal Relating to Corridor 81 Drogheda to Balbriggan

SEA Theme	Summary of the Potential Effects Associated with Corridor 81 Drogheda to Balbriggan	Option	
		A	B
<b>Biodiversity</b>	<p><b>Options A &amp; B:</b> Both corridors include the River Nanny Estuary and Shore SPA, Laytown Dunes/Nanny Estuary pNHA, Boyne Estuary SPA, Boyne Coast And Estuary SAC and pNHA, and River Boyne And River Blackwater SAC. Option B runs along the coastline and is closer to designated sites. Land take requirements are not known at this stage; however, there is potential for Option A to be located along existing road infrastructure where practicable. Option B may traverse greenfield areas along the coastline. It is anticipated the routes would utilise existing infrastructure where practicable.</p> <p>These designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development.</p>	1	2
<b>Population and Human Health</b>	<p>The corridor options would link with Drogheda (population c.40,950) with Balbriggan (population c.21,720). <b>Option A</b> would link the small settlement of Julianstown, whilst <b>Option B</b> would link the two towns with Laytown-Bettystown (population c.11,870) and follow the coast.</p> <p>The corridor options would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p> <p>Given Option B links more communities with larger populations, the option is likely to perform better than Option A in relation to this SEA theme. Option B, given it follows the coast, also offers additional potential relating to tourism and the visitor economy.</p>	2	1
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Drogheda, Julianstown, Gormanstown and Balbriggan and areas of pastures (agricultural areas), forest (forest and semi-natural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Drogheda, Bettystown and Balbriggan and areas of pastures (agricultural areas), intertidal flats (wetlands), and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p> <p>Option A is likely to perform more favourably in relation to this SEA theme as it aligns more along existing road infrastructure and would require less land-take (from agriculture).</p>	1	2
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Boyne Estuary, Stagrennan River, Nanny River, Broadmeadow River, Turvey River, Ballough River. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the Boyne Estuary, Nanny River, Stagrennan River, Turvey River, Mosney River, Delvin River and the Matt River. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Drogheda and Balbriggan. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option B, given it links more communities with larger populations, will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	2	1

SEA Theme	Summary of the Potential Effects Associated with Corridor 81 Drogheda to Balbriggan	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as an enclosure (ME028-059----) and a ring ditch (DU001-032----). The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a fulacht fia (DU002-001006-) and a mound (DU002-003----). The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

Table 82. Appraisal Relating to Corridor 82 Navan to Drogheda

SEA Theme	Summary of the Potential Effects Associated with Corridor 82 Navan to Drogheda	Option		
		A	B	C
<b>Biodiversity</b>	<p><b>Options A &amp; C:</b> The corridor options proposed through Option A and C include one SAC, one SPA, and six pNHA/NHA. These include the River Boyne and River Blackwater SAC and SPA, Boyne Woods pNHA, Crewbane Marsh pNHA, Rossnaree Riverbank pNHA, Dowth Wetland pNHA, King William's Glen pNHA and Boyne River Islands pNHA. Option C traverses along the River Boyne and River Blackwater SAC and SPA, Option A partly traverses the River Boyne and River Blackwater SAC and SPA before diverging from Option C.</p> <p>The designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure such as roads or cycleways where practicable. Option C would potentially traverse greenfield areas.</p> <p><b>Option B:</b> The River Boyne and River Blackwater SAC and SPA, Balrath Woods pNHA, and Duleek Commons pNHA are located within the corridor option. Option B is located south of Options A and C and is situated further away from the River Boyne and River Blackwater SAC and SPA. The designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure such as roads.</p>	3	1	2
<b>Population and Human Health</b>	<p>The corridor options would link Navan (population c.30,170) with Drogheda (population c.40,950). <b>Option A</b> would link Slane (population c.1,370), whilst <b>Option B</b> would link the two towns with Kentstown (population c.1,179). <b>Option C</b> would not link any additional settlements with a population of over 1,000.</p> <p>The corridor options would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	1	2	3
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Navan, Slane and Drogheda and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and mixed forest (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of recreational amenity infrastructure (River Boyne), loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Navan, Kentstown, Duleek and Drogheda and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road, loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option C:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Navan and Drogheda and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and mixed forest (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road / recreational amenity infrastructure, loss of productive agricultural land is unlikely to be significant.</p>	=	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the River Boyne, River Mattock and the Boyne Estuary. The WFD status of these watercourses ranges between 'good' and 'moderate' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the River Boyne, River Nanny and the Boyne Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option C:</b> Several watercourses occur along the route of the proposed corridor, including the River Boyne and the Boyne Estuary. The WFD status of these watercourses ranges between 'good' and 'moderate' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B &amp; C:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Navan and Drogheda. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=	=



SEA Theme	Summary of the Potential Effects Associated with Corridor 82 Navan to Drogheda	Option		
		A	B	C
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option A and B, which link more communities, will however bring additional benefits compared to Option C in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	1	2	3
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a cist (ME025-028----) and a house (ME019-033001-).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a ringfort (ME031-004----) and a church (ME032-004----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option C:</b> A range of cultural heritage assets are present within the proposed corridor, such as a large enclosure (ME026-036----) and a mound (ME026-003----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=	=

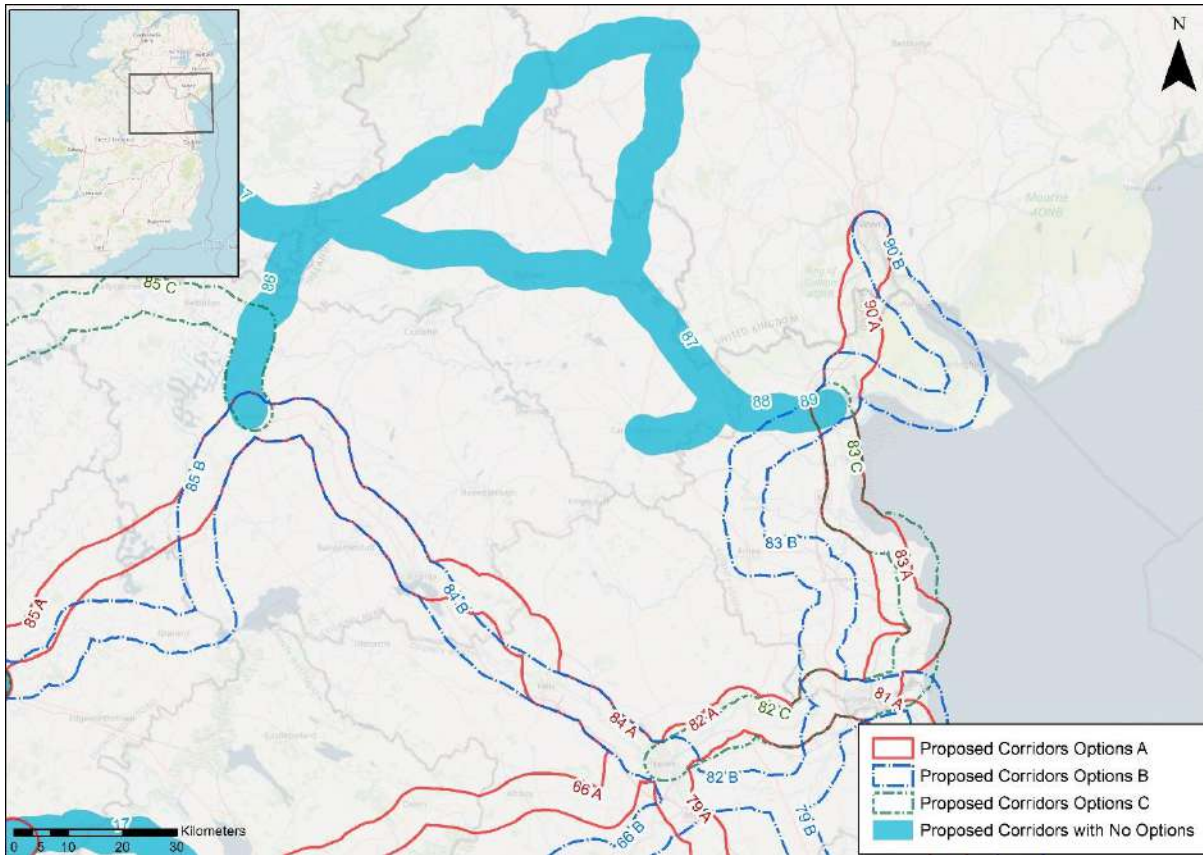


Figure B24: Map of corridor options 83, 84 and 85

Table 83. Appraisal Relating to Corridor 83 Dundalk to Drogheda

SEA Theme	Summary of the Potential Effects Associated with Corridor 83 Dundalk to Drogheda	Option		
		A	B	C
Biodiversity	<p><b>Option A:</b> A number of designated sites occur within the corridor, including four SACs, two SPA and five pNHA/NHAs. These include the Boyne Estuary SPA, Boyne Coast and Estuary SAC and pNHA, River Boyne and River Blackwater SAC, Clogher Head SAC and pNHA, and Dundalk Bay SAC, SPA and pNHA. The designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however, Option A would potentially traverse along existing road infrastructure.</p> <p><b>Option B:</b> A number of designated sites occur within the corridor, including one SAC, one SPA and four pNHA/NHAs. These include the River Boyne and River Blackwater SAC and SPA, Boyne River Islands pNHA, Ardee Cutaway Bog pNHA. The designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however, Option B would potentially traverses along existing road infrastructure.</p> <p><b>Option C:</b> A number of designated sites occur within the corridor, including four SACs, two SPAs and five pNHA/NHAs. These include the Boyne Estuary SPA, Boyne Coast and Estuary SAC and pNHA, River Boyne and River Blackwater SAC, and Dundalk Bay SAC, SPA and pNHA. The designated sites and the key sensitivities associated with the designation would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however, Option C would potentially traverses along existing road infrastructure and through areas of greenfield.</p>			
		2	1	3

SEA Theme	Summary of the Potential Effects Associated with Corridor 83 Dundalk to Drogheda	Option		
		A	B	C
<b>Population and Human Health</b>	<p>The corridor options would link Dundalk (population c.39,000) with Drogheda (population c.40,950). Option A and C would link Castlebellingham-Kilsaran (population c.1,126), Clogherhead (population c.2,145) and Termonfeckin (population c.1,580), whilst Option B would link the two towns with Ardee (population c.4,928), Dunleer (population c.1,820) and Tullyallen (1,550).</p> <p>The corridor options would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p> <p>Option C, given the corridor option follows the coastline, may do more to support the visitor economy and sustainable tourism.</p>	2	3	1
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Dundalk, Clogherhead and Drogheda and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) as per CORINE 2018. Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Dundalk, Louth, Ardee, Dunleer and Drogheda and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) and mixed forest (forest and semi-natural areas) as per CORINE 2018. Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option C:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Dundalk, Clogherhead and Drogheda and areas of pastures (agricultural areas), sport and leisure facilities (artificial surfaces), mixed forest (forest and semi-natural areas) as per CORINE 2018. Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Ramparts River, River Fane, River Glyde, River Slieveboy, Termonfeckin Stream and the Boyne Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the Ramparts River, River Fane, River Glyde, River Dee, River White, River Boyne and the Boyne Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option C:</b> Several watercourses occur along the route of the proposed corridor, including the Ramparts River, River Fane, River Glyde, River Slieveboy, Termonfeckin Stream, River Tullyskar and the Boyne Estuary. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B &amp; C:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Dundalk and Drogheda. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 83 Dundalk to Drogheda	Option		
		A	B	C
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a house (Reg. No. 13826016) and a mound (LH019-011----). The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a road / track (LH017-013----) and ritual site (LH021-003002-). The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option C:</b> A range of cultural heritage assets are present within the proposed corridor, such as a church (LH019-006001-) and a field system LH019-038----). The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=	=

Table 84. Appraisal Relating to Corridor 84 Cavan to Navan

SEA Theme	Summary of the Potential Effects Associated with Corridor 84 Cavan to Navan	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A &amp; B:</b> Option A and B are similar, with a slight diversion between Virginia and Kells. The Lough Ramor pNHA, River Boyne and River Blackwater SAC and SPA and Killyconny Bog (Cloghbally) SAC and pNHA are located within both corridors. The designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however, both options would potentially traverse along existing road infrastructure.</p>	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Cavan (population c.10,910) with Navan (population c.30,170) via Virginia (population c.2,650) and Kells (population c.6,130). Option A would also link Mullagh (population c.1,348).</p> <p>The corridor options would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p> <p>Given Option A links an additional settlement (Mullagh), the option performs more favourably in relation to this SEA theme.</p>	1	2
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Cavan, Virginia, Mullagh, Kells and Navan and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and mixed forest (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) and industrial or commercial units (artificial surfaces) in Cavan, Virginia, Kells and Navan and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and mixed forest (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Cavan River, River Stradone, Nadreegeel Lough Stream, River Blackwater, Mullagh Lough Stream and the River Boyne. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the Cavan River, River Stradone, Nadreegeel Lough Stream, River Blackwater, Mullagh Lough Stream and the River Boyne. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Cavan and Navan. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p><b>Option A,</b> given it links an additional settlement (Mullagh), will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	1	2
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a ring ditch (ME017-065001-) and a ringfort (CV039-078----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a ring ditch (ME017-065001-) and a ringfort (CV039-078----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p>	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 84 Cavan to Navan	Option	
		A	B
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=

Table 85. Appraisal Relating to Corridor 85 Longford to Cavan

SEA Theme	Summary of the Potential Effects Associated with Corridor 85 Longford to Cavan	Option		
		A	B	C
<b>Biodiversity</b>	<p><b>Option A:</b> A number of designated sites occur within the corridor, including one SAC, no SPAs and five pNHA/NHAs. These include the Lough Oughter and Associated Loughs SAC and pNHA, Drumkeen House Woodland pNHA, Cordonaghy Bog pNHA, Carrickglass Demesne pNHA and Lough Gowna pNHA.</p> <p><b>Option B:</b> A number of designated sites occur within the corridor, including three SACs, two SPAs and seven pNHA/NHA. These include Lough Oughter and Associated Loughs SAC and pNHA, Drumkeen House Woodland pNHA, Cordonaghy Bog pNHA, Carrickglass Demesne pNHA, Lough Gowna pNHA, Lough Sheelin SPA and pNHA, Moneybeg and Clareisland Bogs SAC and Derragh Bog SAC.</p> <p><b>Option C:</b> A number of designated sites occur within the corridor, including two SACs, one SPA and fifteen pNHA/NHAs. These include the Lough Oughter and Associated Loughs SAC and pNHA, Ballykenny-Fisherstown Bog SPA, Lough Forbes Complex SAC and pNHA, Rinn River NHA, Lough Errew pNHA, and Corduff Lough pNHA.</p> <p><b>Option A, B &amp; C:</b> The designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however, all options would potentially traverse sections of greenfield as well as traverse along existing infrastructure.</p>	=	=	=
<b>Population and Human Health</b>	<p>The corridor options would link Longford (population c.10,010) with Cavan (population c.10,910). Option C, which is the northerly corridor option, would also link Ballyconnell (population c.1,100) and Belturbet (population c.1,370).</p> <p>The corridor options would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p> <p>Given Option C links additional settlements, this option performs the most favourably of the three options in relation to this SEA theme.</p>	=	=	1
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Cavan and Longford town and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), peat bogs (wetland) and inland marshes (wetland) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road / historic railway line, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Cavan, Granard and Longford town and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), peat bogs (wetland) and inland marshes (wetland) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road / historic railway line, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p><b>Option C:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Cavan, Staghall, Mohill and Longford town and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas), peat bogs (wetland) and coniferous forests (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road / historic railway line, loss of land and loss of productive agricultural land is unlikely to be significant.</p>	=	=	=
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Cavan River, River Erne, River Camlin. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B:</b> Several watercourses occur along the route of the proposed corridor, including the Cavan River, River Erne, River Inny and the River Camlin. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option C:</b> Several watercourses occur along the route of the proposed corridor, including the Cavan River, River Erne, River Woodford, River Blackwater, River Cloone, River Rinn and the River Shannon. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	=	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B &amp; C:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Cavan and Longford town. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=	=

SEA Theme	Summary of the Potential Effects Associated with Corridor 85 Longford to Cavan	Option		
		A	B	C
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option C, given it links additional settlements, will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	=	=	1
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a crannog (CV025-017----) and a ringfort (CV031-037----).</p> <p>Given part of the proposed corridor is located along a railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a crannog (CV025-017----), ford (CV041-023----) and a barrow (LF011-015----).</p> <p>Given part of the proposed corridor is located along a railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p><b>Option C:</b> A range of cultural heritage assets are present within the proposed corridor, such as a ritual site (LE032-066----) and a cottage ornee (Reg. No. 30932001)</p> <p>Given part of the proposed corridor is located along a railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p>Options B &amp; C are likely to perform more favourably in relation to this SEA theme, as they align more along existing infrastructure (railway) and would rejuvenation and connect cultural heritage assets along this route.</p>	2	=	=
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=	=



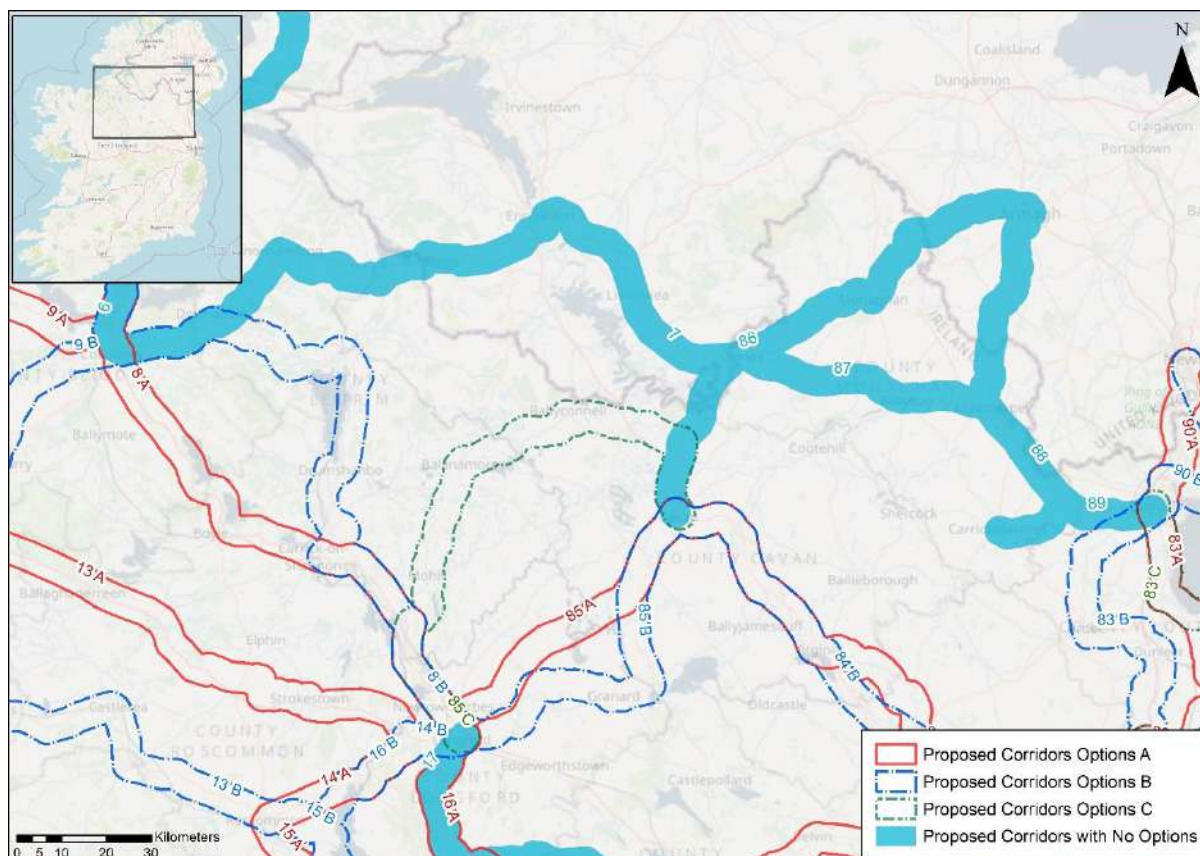


Figure B25: Map of corridor option 86

Table 86. Appraisal Relating to Corridor 86 Armagh to Cavan

SEA Theme	Summary of the Potential Effects Associated with Corridor 86 Armagh to Cavan	Impact
<b>Biodiversity</b>	<p>A number of designated sites occur within the corridor, including two SACs, no SPAs and eleven pNHA/NHAs. These include Lough Oughter and Associated Loughs SAC and pNHA, Annagheane Lough pNHA, Killoosky Lough Cluster SAC and pNHA, Lislannan Bog pNHA, Rosefield Lake and Woodland pNHA, and Wright's Wood pNHA. The Caledon and Tynan ASSI (Area of Special Scientific Interest) is also located within the corridor.</p> <p>The designated sites and the key sensitivities associated with the designation would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however, the corridor follows a historic railway line route and would traverse areas of greenfield.</p>	<b>Uncertain</b>
<b>Population and Human Health</b>	<p>The corridor will link Armagh in Northern Ireland (population c.14,780) and Cavan (population c.10,914) via Monaghan (population c.7,680) and Clones (c1,680). The corridor would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p>	<b>Positive</b>
<b>Land and Soils</b>	<p>Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Cavan, Clones, Monaghan and Armagh and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road / historic railway line, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require some land-take (from agriculture), the impact to likely to be significant / uncertain.</p>	<b>Uncertain</b>
<b>Water</b>	<p>Several watercourses occur along the route of the proposed corridor, including the Cavan River, River Finn, River Maghery, River Blackwater, River Cor and the Callan River. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p>	<b>Uncertain</b>
<b>Air Quality</b>	<p>The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Cavan and Armagh. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	<b>Positive</b>

SEA Theme	Summary of the Potential Effects Associated with Corridor 86 Armagh to Cavan	Impact
<b>Climate Change</b>	<p>The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	<b>Positive</b>
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a ringfort (CV015-034----) and a bridge (Reg. No. 414016250).</p> <p>Given part of the proposed corridor is located along a railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

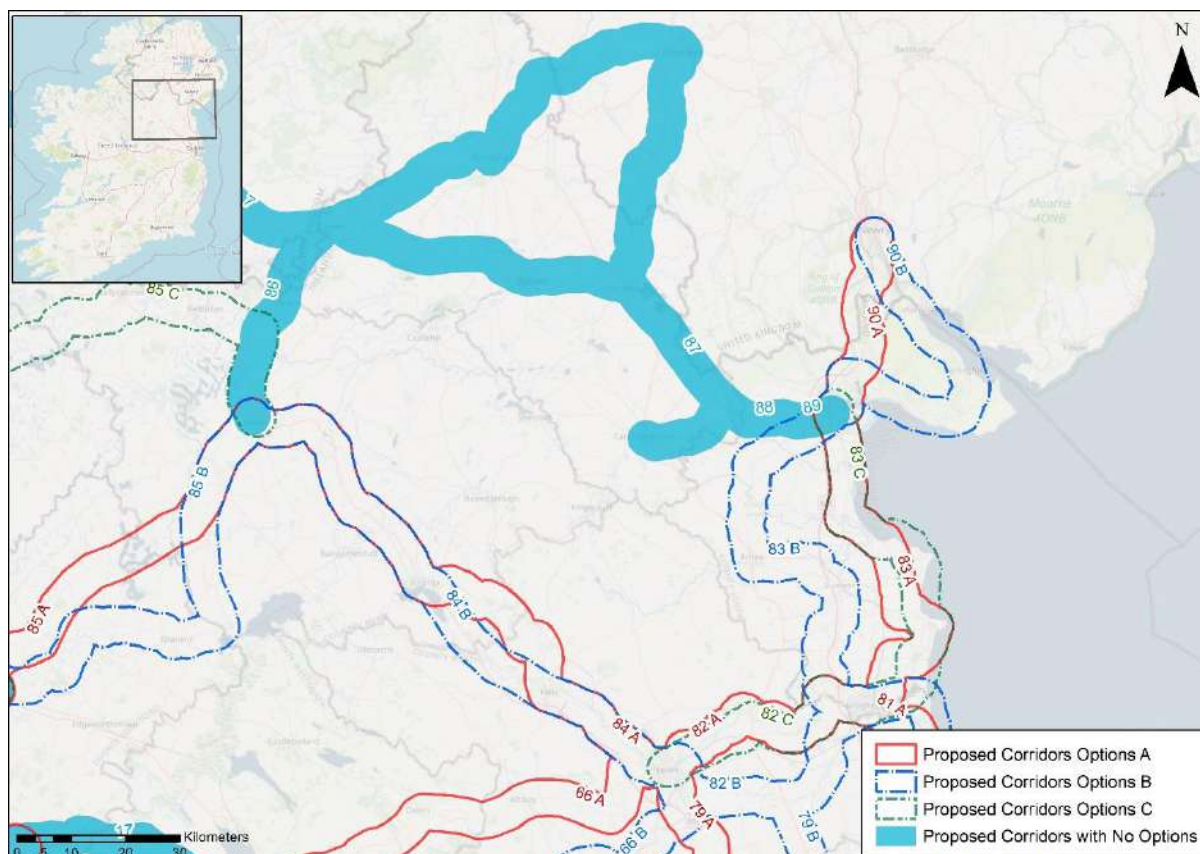


Figure B26: Map of corridor options 87, 88, 89 and 90

Table 87. Appraisal Relating to Corridor 87 Dundalk to Monaghan

SEA Theme	Summary of the Potential Effects Associated with Corridor 87 Dundalk to Monaghan	Impact
<b>Biodiversity</b>	A number of designated sites occur within the corridor, including one SAC, no SPAs and twelve pNHA/NHAs. These include the Drumcah, Toprass and Cortial Loughs pNHA, Lough Ross pNHA, Kilroosky Lough Cluster SAC and pNHA, Lislannan Bog pNHA, Wright’s Wood pNHA, and Drumreask Lough pNHA. The designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however, the corridor follows a historic railway line route and would traverse areas of greenfield.	<b>Uncertain</b>
<b>Population and Human Health</b>	The corridor will link Dundalk (population c.39,000) with Monaghan (population c.7,680) via Clones (c.1,680), Ballybay (population c.1,241) and Castleblayney (population c.3,600). The corridor would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.	<b>Positive</b>
<b>Land and Soils</b>	Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Dundalk, Castleblayney, Clones and Monaghan and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018.  Should the route primarily involve the reallocation of road / historic railway line, loss of land and loss of productive agricultural land is unlikely to be significant.	<b>Uncertain</b>
<b>Water</b>	Several watercourses occur along the route of the proposed corridor, including the Ramparts River, River Fane, Major Lough Stream, Dromore River, River Finn, Magherarney River, River Blackwater. The WFD status of these watercourses ranges between ‘good’ and ‘poor’ during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from ‘at risk’ to ‘under review’.	<b>Uncertain</b>
<b>Air Quality</b>	The route occurs in an area considered to be of ‘Good’ air quality. The route will provide a safe cycle route between Dundalk and Monaghan. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.	<b>Positive</b>
<b>Climate Change</b>	The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.	<b>Positive</b>

SEA Theme	Summary of the Potential Effects Associated with Corridor 87 Dundalk to Monaghan	Impact
	<p>The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.</p>	
<b>Cultural Heritage</b>	<p>A range of cultural heritage assets are present within the proposed corridor, such as a sweathouse (LH006-112----) and a bridge (Reg. No. 41402903).</p> <p>Given part of the proposed corridor is located along a railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p>	<b>Uncertain</b>
<b>Landscape</b>	<p>The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.</p>	<b>Positive</b>

**Table 88. Appraisal Relating to Corridor 88 Dundalk to Armagh**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 88 Dundalk to Armagh</b>	<b>Impact</b>
<b>Biodiversity</b>	Drumcah, Toprass and Cortial Loughs pNHA, Lough Ross pNHA, Muckno Lake pNHA, Lough Smiley pNHA, Drumarg ASSI (Area of Special Scientific Interest) and Straghans Lough ASSI are located within the corridor. The designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however the corridor follows a historic railway line route and would traverse areas of greenfield.	<b>Uncertain</b>
<b>Population and Human Health</b>	The corridor will link Dundalk (population c.39,000) with Armagh in Northern Ireland (population c.14,780) via Castleblayney (population c.3,600) and Keady (in Northern Ireland, population c.3,050). The corridor would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.	<b>Positive</b>
<b>Land and Soils</b>	Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Dundalk, Castleblayney and Armagh and areas of pastures (agricultural areas) and non-irrigated arable land (agricultural areas) as per CORINE 2018  Should the route primarily involve the reallocation of road / historic railway line, loss of land and loss of productive agricultural land is unlikely to be significant.	<b>Uncertain</b>
<b>Water</b>	Several watercourses occur along the route of the proposed corridor, including the Ramparts River, River Fane, Gentle Owen's Lake Stream, Ballymacane River and Callan River. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor range from 'at risk' to 'under review'.	<b>Uncertain</b>
<b>Air Quality</b>	The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Dundalk and Armagh. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.	<b>Positive</b>
<b>Climate Change</b>	The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.  The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.	<b>Positive</b>
<b>Cultural Heritage</b>	A range of cultural heritage assets are present within the proposed corridor, such as a ringfort (MO028-022----) and an enclosure (MO028-023----).  Given part of the proposed corridor is located along a railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.	<b>Uncertain</b>
<b>Landscape</b>	The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.  More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.	<b>Positive</b>

**Table 89. Appraisal Relating to Corridor 89 Dundalk to Carrickmacross**

<b>SEA Theme</b>	<b>Summary of the Potential Effects Associated with Corridor 89 Dundalk to Carrickmacross</b>	<b>Impact</b>
<b>Biodiversity</b>	Drumcah, Toprass and Cortial Loughs pNHA, Monalty Lough pNHA, Spring and Corcrin Loughs pNHA, Lough Naglack pNHA, Lough Fea Demesne pNHA, and Nafarty Fen pNHA are located within the corridor. The designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however a section of the corridor follows a historic railway line route and would traverse areas of greenfield.	<b>Uncertain</b>
<b>Population and Human Health</b>	The corridor will link Dundalk (population c.39,000) with Carrickmacross (population c.5,030). The corridor would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor also has the potential to bring benefits for the visitor economy along the corridor and support community vitality.	<b>Positive</b>
<b>Land and Soils</b>	Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Carrickmacross and Dundalk and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and peat bogs (wetland) as per CORINE 2018. Should the route primarily involve the reallocation of road / historic railway line, loss of land and loss of productive agricultural land is unlikely to be significant.	<b>Uncertain</b>
<b>Water</b>	Several watercourses occur along the route of the proposed corridor, including the River Proules, River Fane, River Carrickrobin and the Ramparts River. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor range from 'at risk' to 'under review'.	<b>Uncertain</b>
<b>Air Quality</b>	The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Carrickmacross and Dundalk. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.	<b>Positive</b>
<b>Climate Change</b>	The development of the corridor as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport. The corridor may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor supports the resilience of the local area to the potential effects of climate change.	<b>Positive</b>
<b>Cultural Heritage</b>	A range of cultural heritage assets are present within the proposed corridor, such as an enclosure (MO029-027----) and a bridge (Reg. No. 41403117). Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.	<b>Uncertain</b>
<b>Landscape</b>	The proposed corridor, given it is likely to follow existing transport infrastructure, is unlikely to lead to significant impacts on landscape character. It also offers opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes. More broadly, the implementation of the corridor will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor also offers opportunities to support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape in the vicinity of the corridor.	<b>Positive</b>

Table 90. Appraisal Relating to Corridor 90 Newry to Dundalk

SEA Theme	Summary of the Potential Effects Associated with Corridor 90 Newry to Dundalk	Option	
		A	B
<b>Biodiversity</b>	<p><b>Option A:</b> A number of designated sites occur within the corridor, including two SACs, one SPA, three pNHA/NHAs and four ASSIs (Area of Special Scientific Interest). These include the Dundalk Bay SAC, SPA and pNHA, Carlingford Mountain SAC and pNHA, Carlingford Lough SAC, Ring of Gullion ASSI and Ravensdale Plantation pNHA. The designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however it is anticipated the route would utilise existing infrastructure where practicable such as road infrastructure.</p> <p><b>Option B:</b> A number of designated sites occur within the corridor, including three SACs, two SPAs, six pNHA/NHAs and five ASSI. These include Dundalk Bay SAC, SPA and pNHA, Carlingford Mountain SAC and pNHA, Liscarragh Marsh pNHA, Carlingford Lough SAC, SPA and pNHA, Carlingford Lough ASSI and Ring of Gullion ASSI.</p> <p>The designated sites and the key sensitivities associated with the designations would need to be considered further when determining the final route during scheme development. Land take requirements are not known at this stage; however, it is anticipated the route would utilise existing infrastructure where practicable such as road infrastructure. A section of the corridor follows a historic railway line route and could potentially traverse areas of greenfield.</p>	1	2
<b>Population and Human Health</b>	<p>The corridor options would link Newry in Northern Ireland (population c.13,210) with Dundalk (population c.39,000). Option B would also link Carlingford (population c.1,445).</p> <p>The corridor options would support an enhancement of accessibility to services and facilities in the settlements by active travel modes, promoting social inclusion and the quality of life of residents and supporting health and wellbeing. The corridor options also have the potential to bring benefits for the visitor economy along the corridor and support community vitality.</p> <p>Given Option B links more communities, the option is likely to perform better than Option A in relation to this SEA theme. Option B also offers additional potential to make more of the visitor offer of the Cooley Peninsula and support sustainable tourism.</p>	2	1
<b>Land and Soils</b>	<p><b>Option A:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Dundalk, Dromad and Newry and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and coniferous forests (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Should the route require land-take (from agriculture), the impact to likely to be significant / uncertain.</p> <p><b>Option B:</b> Land use along the proposed corridor / within the area is variable and includes areas of urban fabric (artificial surfaces) in Dundalk and Carlingford and Newry and areas of pastures (agricultural areas), non-irrigated arable land (agricultural areas) and coniferous forests (forest and semi-natural areas) as per CORINE 2018.</p> <p>Should the route primarily involve the reallocation of road / historic railway line, loss of land and loss of productive agricultural land is unlikely to be significant.</p> <p>Option B is likely to perform more favourably in relation to this SEA theme as it aligns more along existing rail infrastructure and would require less land-take.</p>	2	1
<b>Water</b>	<p><b>Option A:</b> Several watercourses occur along the route of the proposed corridor, including the Castletown Estuary, River Raskeagh, River Flurry. The WFD status of these watercourse ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor ranges from 'at risk' to 'under review'.</p> <p><b>Option B</b> Several watercourses occur along the route of the proposed corridor, including the Castletown Estuary, River Raskeagh, River Rockmarshall, River Big, Newry Estuary and Carlingford Lough. The WFD status of these watercourses ranges between 'good' and 'poor' during the 2013-2018 monitoring period. The watercourses within the proposed corridor range from 'at risk' to 'under review'.</p>	=	=
<b>Air Quality</b>	<p><b>Options A &amp; B:</b> The route occurs in an area considered to be of 'Good' air quality. The route will provide a safe cycle route between Dundalk and Newry. This will promote a modal shift to active modes of travel which will in turn support ongoing improvements to air quality in the area.</p>	=	=
<b>Climate Change</b>	<p>The development of the corridor options as part of the NCN would promote a shift to active modes of travel from higher emission modes, including the private car. This will support a limitation of greenhouse gas emissions from transport.</p> <p>Option B, given it links an additional settlement (Carlingford), will however bring additional benefits in relation to this element of climate change mitigation.</p> <p>The corridor options may cross (and potentially negatively/positively impact on) areas of flood risk. Whilst impacts on flood risk, and, more broadly, climate change adaptation, depends on the detailed route of the corridor and scheme design, there would be a need to ensure that the delivery of the corridor options supports the resilience of the local area to the potential effects of climate change.</p>	2	1

SEA Theme	Summary of the Potential Effects Associated with Corridor 90 Newry to Dundalk	Option	
		A	B
<b>Cultural Heritage</b>	<p><b>Option A:</b> A range of cultural heritage assets are present within the proposed corridor, such as a metalworking site (LH007-127002-) and fulacht fia (LH007-128----).</p> <p>The development of the cycle corridor offers the potential for the rejuvenation and enhanced enjoyment of cultural heritage assets. However, the proposed corridor also has the potential to impact on the setting of archaeological assets which occur along the proposed corridor.</p> <p><b>Option B:</b> A range of cultural heritage assets are present within the proposed corridor, such as a midden (LH008-034----) and a bridge (Reg. No. 13900806).</p> <p>Given part of the proposed corridor is located along a historic railway line, sensitive development of the corridor as a cycle route offers the potential for the rejuvenation and enhanced enjoyment of this heritage asset. However, the proposed corridor also has the potential to impact on the setting of other cultural heritage assets (e.g., archaeological remains) which may occur along the proposed corridor.</p> <p>Option B is the preferred option for cultural heritage, as it aligns along existing infrastructure (railway) and would rejuvenation and connect cultural heritage assets along this route.</p>	2	1
<b>Landscape</b>	<p>The corridor options, given they largely follow existing transport corridors, are unlikely to lead to significant impacts on landscape character. They also offer opportunities to enhance the quality of the public realm, if high quality design and layouts are integrated within subsequent schemes.</p> <p>More broadly, the corridor options will support active travel modes, which are modes of transport with limited impacts on landscape character. Through promoting active travel modes, the corridor options will also support an enhanced understanding and enjoyment of the special qualities and intrinsic character of the landscape.</p>	=	=



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Appendix H

# SEA Adoption Statement

# National Cycle Network Plan

Strategic Environmental Assessment (SEA) Adoption  
Statement

Transport Infrastructure Ireland

July 2022

## Quality information

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## Revision History

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# 1. Introduction

## 1.1 Introduction and Legislative Context

This is the Strategic Environmental Assessment (SEA) Adoption Statement for the National Cycle Network (NCN) Plan (referred to hereafter as the 'NCN Plan').

Strategic environmental assessment (SEA) is a process for evaluating, at the earliest appropriate stage, the likely environmental effects of implementing a Plan or other strategic action in order to ensure that environmental considerations are appropriately addressed in the decision-making process both during the preparation and prior to adoption of a plan.

The *European Directive (2001/42/EC) on the Assessment of the Effects of Certain Plans and Programmes on the Environment* (the 'SEA Directive') was transposed into national legislation by:

- European Communities (EC) (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. No. 435 of 2004); and
- Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. No. 436 of 2004).

These regulations were subsequently amended by the:

- EC (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations, 2011 (S.I. No. 200 of 2011); and
- Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations, 2011 (S.I. No. 201 of 2011).

Schedule 2 (9) of S.I. No. 435 of 2004 highlights that an SEA "*shall be carried out for all plans and programmes...which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications and tourism, and which set the framework for future development consent of projects listed in Annexes I and II to the Environmental Impact Assessment Directive*"<sup>1</sup>. The SEA for the NCN Plan has therefore been undertaken to meet the requirements of S.I. No. 435 of 2004 (as amended).

The legislation requires that the plan-making authority must make available an SEA Adoption Statement summarising how the SEA and SEA consultations have been taken into account in the making of the Plan. In addition, the plan-making authority has to detail the reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with, and the measures decided concerning monitoring.

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<sup>1</sup> Section 9(1) of S.I. No. 435 of 2004 as amended by S.I. No. 200 of 2011

This SEA Adoption Statement is a reflective document that looks back on the SEA process, what has been achieved and it also sets out what monitoring will be done in the future.

## 1.2 Content of the SEA Adoption Statement

The main purpose of an SEA Adoption Statement is to document how environmental considerations and the views of statutory consultees and other submissions, and observations received during the consultation phases have been taken into account during the preparation of the final Plan and the arrangements put in place for monitoring.

The SEA Adoption Statement is described in Article 9 of the SEA Directive as a statutory requirement and should be made available with the adopted Plan. The SEA Adoption Statement will be issued to the ‘*environmental authorities*’ previously consulted, with a view to outlining the key stages of the SEA process and illustrating how environmental considerations have been integrated into the plan and key decisions taken in the Plan as a consequence of the SEA.

The SEA Adoption Statement is required to include the following information:

- a) How environmental considerations have been integrated into the Plan (**Section 2**);
- b) How the Environmental Report, submissions and observations made to the planning authority and any transboundary consultations (where relevant) have been taken into account during the preparation of the Plan (**Section 3**);
- c) The reasons for choosing the Plan, as adopted, in the light of the other reasonable alternatives dealt with (**Section 4**); and
- d) The measures decided upon to monitor the significant environmental effects of implementation of the Plan (**Section 5**).

On adoption of the National Cycle Network Plan the authority (Transport Infrastructure Ireland (TII)) is required under Section 13I of the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. No. 436 of 2004) as amended, to make this SEA Statement available to the ‘*environmental authorities*’ and the public.

## 1.3 Implications of SEA for the Plan

An SEA Screening Report was prepared by AECOM for the NCN Plan in November 2021. The screening sought to determine whether the full SEA process was required for the NCN Plan. The report concluded the following:

*“... the plan is likely to set the framework for subsequent plans and projects which have the potential for significant effects on the environment. This includes, potentially, plans requiring an SEA process or projects requiring an EIA process. For this reason, it is concluded that a full SEA process is required to accompany the NCN Plan”*



The SEA was subsequently undertaken, with the findings of the SEA process being presented in the SEA Environmental Report, which accompanied the draft NCN Plan for public consultation (May 2022).

Following consultation on the draft NCN Plan, the SEA Environmental Report was updated to in order to take account of:

- consultation comments on the draft NCN Plan and Environmental Report; and
- changes to the draft NCN Plan that were made following consultation.

Transport Infrastructure Ireland (TII) has taken into account the findings of all relevant SEA outputs during the development of the NCN Plan. In this respect the SEA has formed an integral part of the evidence base for the NCN Plan.

## 2. How Environmental Considerations were Integrated into the Plan

### 2.1 Introduction

Environmental considerations were integrated into the NCN Plan making process at all stages, *i.e.*, the Scoping stage, at the Environmental Report stage and following the submissions and observations from the ‘*environmental authorities*’ and the public.

Environmental considerations were integrated into the NCN Plan through:

- Responses to consultation.
- Communication of environmental sensitivities throughout the SEA process.
- Appropriate Assessment<sup>2</sup>.
- Consideration of alternatives.
- Integration of individual measures into the NCN Plan (*i.e.*, SEA and AA).

These stages are discussed in more detail below.

### 2.2 Consultation

The ‘environmental authorities’ identified by the SEA Regulations, were issued the SEA Scoping Report in March 2022. Currently, the SEA environmental authorities are as follows the:

- Environmental Protection Agency (EPA);
- Minister for Agriculture, Food and the Marine;
- Minister for Housing, Local Government and Heritage [including the Development Applications Unit]; and
- Minister for the Environment, Climate and Communications.

As the NCN Plan has the potential to affect the environment in Northern Ireland, transboundary consultation was also undertaken with the main environmental authority in Northern Ireland:

- Department of Agriculture, Environment and Rural Affairs (DAERA): Northern Ireland Environment Agency (NIEA)<sup>3</sup>.

The Draft NCN Plan and SEA Environmental Report were made available for consultation, alongside consultation on the draft NCN Plan<sup>4</sup>. The SEA environmental authorities, as well as

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<sup>2</sup> A Stage 2 Appropriate Assessment (AA) has been undertaken alongside the preparation of the Plan.

<sup>3</sup> A submission was also received from Department for Communities (DfC): Historic Environment Division (HED).

<sup>4</sup> Website for the NCN Plan Consultation available at: <https://ncn.consultation.ai/>

the relevant transboundary authority, were notified so that they may make a submission or observation in relation to the SEA Environmental Report and / or the draft NCN Plan.

Details of the submissions made during the SEA Scoping Report and draft NCN Plan and / or the SEA Environmental Report while on public display is provided in Section 3.2 and Section 3.3 respectively.

## 2.3 Communication of Environmental Sensitivities Throughout the SEA process

Environmental considerations were integrated into the draft NCN Plan before it was placed on public display. Individual environmental sensitivities that were considered by the SEA and considered by the Transport team, included the following:

- Biodiversity - European sites (Special Areas of Conservation and Special Protection Areas).
- Biodiversity - other ecological designations.
- Land - Corine Land Cover.
- Soils - SIS<sup>5</sup> National Soils.
- Surface water - WFD river waterbody status 2013-2018.
- Air quality - Air Quality Index for Health (AQIH).
- Cultural heritage.

### 2.3.1 Appropriate Assessment (AA)

Under the EU Habitats Directive Member States are required to ensure the protection, conservation, and management of the habitats and species of conservation in all European sites.

The draft NCN Plan has undergone AA screening during its preparation and an AA Screening was prepared. The conclusion of the AA Screening<sup>6</sup> was:

*“At this strategic stage these corridors are intentionally wide to enable detailed design work to be undertaken to capture the most appropriate route.*

*Given this is and the multiple potential impacts associated with constructing new or updating existing cycle routes, it is impossible to draw a conclusion of ‘no likely significant effect’ in relation to the NCN Plan. Therefore, it is necessary to proceed to the next stage*

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<sup>5</sup> Soil Information System

<sup>6</sup> AECOM (2022).

*of Appropriate Assessment. All potential NCN route corridors are screened in for the Appropriate Assessment.”*

The draft NCN Plan was then subject to a “Stage 2 AA” as required by Article 6(3) of the Habitats Directive (92/43/EEC) and a Natura Impact Report (NIR) was prepared and placed on public display.

The preparation of the draft NCN Plan, SEA and AA has taken place concurrently and the findings of the AA have informed both the Plan and the SEA. The NIR concluded:

*“Given the flexibility of design of the proposed cycle routes and with the addition of recommendations made, it can be concluded that the NCN would not have an adverse effect on European sites alone.”*

*“Additionally, an in-combination assessment was also undertaken of relevant plans and projects... ..it can be concluded that the NCN Plan and the proposed cycle routes would not have an adverse effect on the integrity of European sites, either alone or in-combination with other plans and projects.” [Hold Point - TBC]*

## 2.4 Consideration of Alternatives

Consideration of the environmental effects arising from a variety of different alternatives for the NCN Plan (Section 4.3) has contributed towards the protection and management of the environment within the NCN Plan.

## 2.5 Integration of Individual Measures into the NCN Plan

The SEA and AA processes that have been undertaken alongside the preparation of the NCN Plan. These processes have brought about changes to the emerging NCN Plan, which will support the avoidance and mitigation of potential negative effects during the Plan’s implementation. **Table 5.1** sets out the proposed monitoring programme for the SEA.

## 3. Environmental Report and Submissions / Observations

### 3.1 Introduction

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

### 3.2 Submissions on the SEA Scoping Report

SEA Scoping submissions were made by the following environmental authorities and transboundary consultees (Northern Ireland):

- Department of Environment, Climate and Communications (DECC). (Environmental Protection and Circular Economy - Materials Management Divisions).
- Geological Survey Ireland (GSI) under DECC.
- Environmental Protection Agency (EPA).
- Department of Agriculture, Environment and Rural Affairs (DAERA): Northern Ireland Environment Agency (NIEA).
- Department for Communities (DfC): Historic Environment Division (HED).

A submission from DECC<sup>7</sup> was for the inclusion of the *Whole of Government Circular Economy Strategy 2021*<sup>8</sup> amongst the plans and policies referenced in the SEA.

A submission from **Geological Survey Ireland**, provided information and suggestions including the following topics that informed the preparation of the Draft NCN Plan and SEA:

- data sets and maps to use during the SEA process;
- culture and tourism sites that would benefit from the cycle network;
- consideration for groundwater, geohazards, natural resources, soils, surface water, sediments, historic mines, marine and coasts, coastal vulnerability etc.; and
- relevant guidelines.

A submission from the **Environmental Protection Agency** provided information and recommendations on the following:

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<sup>7</sup> Environmental Protection and Circular Economy - Materials Management Divisions

<sup>8</sup> Department of Environment, Climate and Communities (2021).

- *State of the Environment Report - Ireland's Environment 2020*, noting recommendations, key issues and challenges described in the report;
- the transition to a low carbon climate resilient economy and society;
- the NCN Plan's commitment to monitoring, reviewing and reporting;
- the Plan should identify any significant data and knowledge gaps;
- the Plan and SEA should alignment with other key plans and programmes;
- the Plan should commit to protecting designated national and European sites;
- the scope of the SEA and the NCN Plan; and
- available / useful guidance and resources for the SEA process.

A submission from the **Northern Ireland Environment Agency**<sup>9</sup> provided information and recommendations on the following:

- advise that transboundary issues are taken into account in the SEA Environmental Report;
- the SEA should consider all potential impacts including those which may impact Northern Ireland (NI) both directly and indirectly;
- NI baseline conditions and relevant plans and programmes need consideration;
- mitigation and monitoring will need to be implemented;
- data sets, information sources, web-links to use during the SEA process; and
- comments from the Climate Change Unit, Drinking Water Inspectorate and the Water Management Unit.

A submission from the **Historic Environment Division**<sup>10</sup> provided information and suggestions on the following:

- consideration and assessment of likely impacts on transboundary heritage assets will therefore be required in relation to this topic in the SEA Environmental Report;
- cultural heritage assets on the border, which have the potential to be benefit from cycle routes;
- opportunities to enhance understanding of local heritage along cycle routes; and
- international conventions, legislation, regional strategies and policies.

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<sup>9</sup> Department of Agriculture, Environment and Rural Affairs

<sup>10</sup> Department for Communities

**Appendix A** presents a full summary of the submissions received from the environmental authorities and transboundary consultees at scoping stage.

### 3.3 Submissions on the Draft NCN Plan and SEA Environmental Report

Submissions were made on the draft NCN Plan and accompanying draft SEA Environmental Report while on public display (May / June 2022). The Natura Impact Report (NIR) was also made available for public consultation. The submissions resulted in updates being made to the above reports. Submissions were received from the following environmental authorities:

- Environment Protection Agency (EPA).
- Department for Communities: Historic Environment Division (HED).
- Department of Agriculture, Environment and Rural Affairs (DAERA): Northern Ireland Environment Agency (NIEA).
- Geological Survey Ireland (GSI) under DECC.
- National Parks and Wildlife Services (NPWS) under Department of Housing, Local Government and Heritage (DHLGH).

A number of submissions were also made by the public during this consultation period. Updates to the SEA Environmental Report were made to reflect comments received through these submissions and are detailed in **Table 3.1**.

### 3.4 SEA Environmental Report

As previously noted, the draft NCN Plan, SEA Environmental Report and Natura Impact Report (NIR) were placed on public display. Recommendations / suggestions made during public consultation were considered by the Plan makers.

The SEA Environmental Report was updated to reflect comments made in consultation submissions. These comments, and how they have been considered / addressed through the SEA process, are presented in **Table 3.1**.

TII have taken into account the findings of all relevant SEA outputs during the development of the NCN Plan and before the Plan was adopted. In this respect the SEA has formed an integral part of the evidence base for the NCN Plan.

**Table 3.1: Summary of SEA Environmental Report Submissions**

Environmental Authority	Summary of Submission	Response / Comment
1. Environment Protection Agency (EPA)	<b>Overview</b>	
	<ul style="list-style-type: none"> <li>The EPA recognises the importance of promoting and implementing a shift to more sustainable modes of transport, including cycling.</li> <li>A key element of effective SEA is to ensure that the key environmental issues, mitigation measures and any recommendations from the SEA Environmental Report are integrated into the plan.</li> </ul>	Comments are noted.
	<ul style="list-style-type: none"> <li>The SEA Environmental Report states that due to the high-level nature of the cycle corridors proposed for the NCN, it is not possible to propose specific mitigation measures for each corridor.</li> <li>The SEA Environmental Report could refer to tiering in environmental assessments. EPA project - “<i>Tiering in Environmental Assessments</i>” and the associated guidance document with the research. Available at: <a href="https://www.epa.ie/publications/research/epa-research-2030-reports/Research_Report_391.pdf">https://www.epa.ie/publications/research/epa-research-2030-reports/Research_Report_391.pdf</a></li> <li>Research identifies that SEAs and their associated plans should provide guidance, mitigation and monitoring recommendations for lower tier environmental assessments, <i>i.e.</i>, environmental impact assessments (EIAs).</li> </ul>	Suggestion for guidance has been considered for tiering in environmental assessments.
	<b>General Comments</b>	SEA ER updated. Review of Relevant Plans is now Chapter 3 of SEA ER. Environmental Baseline is now Chapter 4 of SEA ER.
	<ul style="list-style-type: none"> <li>Reorganise layout to follow the flow of information listed in the Schedule 2 of the SEA Regulation (S.I. No. 435 of 2004 as amended).</li> <li>Baseline and relationship between other NCN and other plans would merit from the inclusion in the main body of the report.</li> </ul>	
	<b>Non-Technical Summary (NTS)</b>	An NTS has been completed.
	<b>Scope / Geographical Coverage of the NCN Plan</b>	Key settlements and destinations for inclusion on the NCN were identified based on a range of criteria as part of the network development stage.
	<ul style="list-style-type: none"> <li>The NCN should take into account future projections of population growth, and in particular specific areas where it is expected that settlements will exceed 5,000 inhabitants within the lifetime of the plan.</li> <li>Refer to the NPF and the RSES.</li> </ul>	
<b>Alignment with Plans and Programmes</b>	A policy review for the NCN Plan has been undertaken to assess alignment of the Plan with these plans and programmes.	
<ul style="list-style-type: none"> <li>Ensure the NCN aligns with key relevant higher-level plans and programmes and is consistent with the relevant objectives and policy commitments including the Climate Action Plan 2021, the draft River Basin Management Plan 2022-2027.</li> <li>The NCN must be consistent with the NPF (in particular NPO 22, 27 and 462) and the three RSES.</li> <li>The NCN and SEA should include a schematic showing the relevant plan hierarchy for EU and national transport related plans.</li> <li>EPA welcomes reference to the UN Sustainable Development Goals and recommends discussing the relevance of particular goals and their links with the NCN SEA.</li> <li>The NCN Plan should take account of the National Biodiversity Action Plan which is currently under review.</li> </ul>		
<b>Alignment with Plans and Programmes</b>	Suggestion for schematic is noted. This has been added to Section 2.2 of the SEA ER.	
<ul style="list-style-type: none"> <li>The NCN and SEA should include a schematic showing the relevant plan hierarchy for EU and national transport related plans.</li> </ul>		



Environmental Authority	Summary of Submission	Response / Comment
	<b>Alignment with Plans and Programmes</b>	
	<ul style="list-style-type: none"> <li>EPA welcomes reference to the UN Sustainable Development Goals and recommends discussing the relevance of particular goals and their links with the NCN SEA.</li> </ul>	Suggestion for the UN Sustainable Development is noted. This has been added to Section 3.1.1 of the SEA ER.
	<b>Alignment with Plans and Programmes</b>	
	<ul style="list-style-type: none"> <li>The NCN Plan should take account of the National Biodiversity Action Plan which is currently under review</li> </ul>	A policy review for the NCN Plan has been undertaken to assess alignment of the Plan with this plan.
	<b>Relevant Aspects of Current State of the Environment</b>	
	<i>Water Quality / WFD</i>	Comment on potential hydromorphological is noted.
	<ul style="list-style-type: none"> <li>Hydromorphology is the second most significant pressure on water quality in Ireland. This pressure relates to damage to habitat and natural river or lake processes, through physical modification.</li> <li>The River Hydromorphology Assessment Technique (RHAT) is used to determine the hydromorphological condition of our rivers and the natural quality of the riparian zone.</li> </ul>	Section 4.6.3 of the SEA ER has been updated.
	<b>Relevant Aspects of Current State of the Environment</b>	
	<ul style="list-style-type: none"> <li>Any developments associated with the NCN Plan, within the riparian zone of rivers and lakes should therefore carefully consider their long-term future impact on water quality and in particular hydromorphology, within this context.</li> <li>The NCN should also ensure the wider WFD objectives are adhered to and not compromised during implementation.</li> </ul>	Any development as a result of the Plan, will consider the long-term future impact on WQ, including hydromorphology and the WFD objectives.
	<b>SEA Objectives</b>	
	<i>Population and Human Health</i>	Suggestion for update of SEO is welcomed. Table 5.1 of the SEA ER has been updated.
	<ul style="list-style-type: none"> <li>The assessment question "<i>Promote the use of healthier modes of travel?</i>" could be amended to refer to the "<i>...use and benefits...</i>".</li> </ul>	
	<b>SEA Objectives</b>	
	<i>Water</i>	Suggestion for update of SEO is welcomed. Table 5.1 of the SEA ER has been updated.
	<ul style="list-style-type: none"> <li>Amend objective to "<i>Protect, restore and where necessary improve and maintain water quality (surface waters and ground waters) to meet the objectives of the Water Framework Directive</i>".</li> <li>Amend assessment question to "<i>minimising any hydromorphological impacts</i>".</li> </ul>	
	<b>Alternatives</b>	
	<ul style="list-style-type: none"> <li>EPA acknowledge the detailed analysis of alternatives for the various cycle, it is not clear how this analysis of the different route options will be reflected in the final NCN.</li> <li>There would be merits in describing the alternatives considered, the methodology applied, and the preferred corridors selected in the NCN.</li> <li>These should be accompanied by relevant figures showing the preferred corridors.</li> <li>The alternatives should be assessed against the 'SEO's', identified in the SEA ER.</li> </ul>	<p>The analysis has been considered by plan makers, including in light of consultation responses received on the NCN Plan.</p> <p>The alternatives considered and preferred corridors were set out in the Environmental Report and Updated Environmental Report.</p> <p>The SEO and associated assessment questions have been used as a basis of the assessment but presented through the SEA themes to enhance the accessibility of reporting.</p>

Environmental Authority	Summary of Submission	Response / Comment
	<b>Mitigation</b>	
	<ul style="list-style-type: none"> <li>The examples of mitigation and enhancement measures proposed in Section 5.3 of the report could be incorporated into the NCN as a set of high-level environmental criteria to which projects developed under the NCN could adhere.</li> </ul>	The Plan will incorporate the environmental mitigation from the SEA ER into the final NCN Plan.
	<b>Mitigation</b>	
	<ul style="list-style-type: none"> <li>There is also merit in including a measure relating to promoting the co-benefits that could be gained for air quality, noise and greenhouse gas emissions as part of the shift to sustainable and active modes of travel.</li> </ul>	The Plan will incorporate the environmental mitigation from the SEA ER into the final NCN Plan.
	<b>Integration of SEA into the NCN</b>	
	<ul style="list-style-type: none"> <li>The mitigation measures from the SEA Environmental Report should be incorporated into the NCN.</li> <li>The SEA Environmental Report states that due to the high-level nature of the nature of the corridors proposed for the NCN, it is not possible to propose specific mitigation measures for each corridor. The SEA Environmental Report could refer to tiering in environmental assessments - "Tiering in Environmental Assessments" and the associated guidance document with the research.</li> <li>The research identifies that SEAs and their associated plans should provide guidance, mitigation and monitoring recommendations for lower tier environmental assessments.</li> </ul>	The Plan will incorporate the environmental mitigation from the SEA ER into the final NCN Plan.
	<b>Monitoring</b>	
	<ul style="list-style-type: none"> <li>Monitoring programme should be flexible to take account of specific environmental issues and unforeseen adverse impacts and deal with the possibility of cumulative effects.</li> <li>Monitoring of positive and negative effects should be considered.</li> <li>Monitoring programme should set out data sources, monitoring frequencies, responsibilities and reporting.</li> <li>Should adverse impacts be identified during implementation, TII should ensure that suitable and effective remedial action is taken.</li> </ul>	A monitoring programme has been set out in Section 5 of this SEA Adoption Statement.
	<b>Monitoring</b>	
	<ul style="list-style-type: none"> <li>The NCN should include provisions for annual reporting on implementation of the NCN commitments.</li> <li>Align the NCN implementation, reporting and monitoring with environmental monitoring and reporting requirements under the SEA legislation.</li> <li>Guidance on SEA-related monitoring is available on the EPA website.</li> </ul>	The Plan will include an implementation monitoring framework. Comment on the SEA-related monitoring is noted.
	<b>Future amendments to the NCN Plan</b>	
	<ul style="list-style-type: none"> <li>Future amendments to the NCN should be screened for likely significant environmental effects, using the same method of assessment applied.</li> </ul>	Future amendments to the Plan will be screened for likely significant environmental effects.
	<b>SEA Statement – "Information on the Decision"</b>	
	<ul style="list-style-type: none"> <li>Prepare an SEA Statement once NCN Plan is finalised including: <ul style="list-style-type: none"> <li>How environmental considerations have been integrated;</li> <li>How the Environmental Report, submissions, observations and consultations have been taken into account during the preparation;</li> <li>The reasons for choosing the NCN Plan adopted in the light of other reasonable alternatives dealt with; and</li> <li>The measures decided upon to monitor the significant environmental effects of implementation of the NCN.</li> </ul> </li> <li>A copy of the SEA Statement with the above information should be sent to any EA's consulted during the SEA process.</li> </ul>	The SEA Statement has been prepared and is issued to the EA's with the Final NCN Plan.
	<b>The NCN Plan Comments</b>	
	<ul style="list-style-type: none"> <li>Include a schematic outlining the hierarchy of relevant EU and national plans to which the NCN relates.</li> </ul>	Comments are noted and have been incorporated into the Final NCN Plan.

Environmental Authority	Summary of Submission	Response / Comment
	<ul style="list-style-type: none"> <li>• Include clarity on the lifespan of the plan - will there be a review.</li> <li>• Consider aligning any proposed reviews of the plan with reviews of other relevant plans, e.g., Climate Action Plan.</li> </ul> <p><b>Vision</b></p> <ul style="list-style-type: none"> <li>• The Plan should make reference to the targets in the Climate Action Plan 2021.</li> </ul> <p><b>Peatlands and People LIFE project</b></p> <ul style="list-style-type: none"> <li>• Consult with the project coordinators in relation to the development of the peatland's cycleways. <a href="https://peatlandsandpeople.ie/">https://peatlandsandpeople.ie/</a></li> </ul> <p><b>Environmental Pressures</b></p> <ul style="list-style-type: none"> <li>• The NCN would benefit from a more explicit explanation in terms of environmental pressures that it will address.</li> </ul> <p><b>Integration of Environmental Assessments</b></p> <ul style="list-style-type: none"> <li>• The NCN Plan would benefit from the inclusion of a section or chapter related to "Environmental Assessment" showing how the assessment process and the SEA recommendations have been integrated into the NCN.</li> <li>• Include clear commitments in the NCN to implement the recommendations and mitigation and monitoring measures identified in the SEA.</li> </ul> <p><b>Monitoring and Implementation</b></p> <ul style="list-style-type: none"> <li>• The NCN would benefit from the inclusion of a chapter relating to monitoring and implementation.</li> <li>• Set out how the NCN will be implemented and reviewed over its lifetime.</li> <li>• A set timeframe for review.</li> <li>• Also include provisions for collaboration with relevant public authorities and stakeholders during the implementation stage.</li> <li>• Recommend aligning the implementation monitoring/reporting of the NCN with the environmental monitoring required under the SEA legislation.</li> <li>• The requirements for SEA and AA should also be considered in future reviews of the NCN.</li> </ul> <p><b>Key Chapters</b></p> <ul style="list-style-type: none"> <li>• Consult relevant chapters of Ireland's Environment - An Integrated Assessment 2020.</li> <li>• Chapter 2.</li> <li>• Chapter 11.</li> <li>• Chapter 14.</li> <li>• These chapters should be consulted along with the related Key Messages prior to finalising the NCN Plan and the SEA process.</li> </ul>	
2. Department for Communities: Historic Environment Division (HED)	<ul style="list-style-type: none"> <li>• HED welcomes their comments to the Scoping report have been addressed.</li> <li>• HED welcomes the potential of the Plan to make the historic environment more accessible to the public through sustainable transport means. Recognise opportunities to better reveal the significance of heritage assets.</li> <li>• HED accepts the appraisal of findings for cross border corridor route options on cultural heritage as uncertain</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• To conserve or reuse heritage assets as ancillary facilities for cyclists, would serve to meet Cultural Heritage Objectives.</li> <li>• Opportunities to enhance understanding of local heritage along cycle routes is encouraged.</li> <li>• Recommend aligning new sections of cycle routes along historic routeways, townland borders, field boundaries, and retaining and utilising local features to conserve and enhance historic landscape character, and the inter-relationship of transboundary cultural heritage.</li> </ul>	<p>Comments on the SEA ER are noted.</p> <hr/> <p>Comments are noted. Objectives of the NCN Plan include incorporating existing greenways, disused railways, canals, bypassed national roads, regional and local roads, long distance trails, as appropriate.</p>

Environmental Authority	Summary of Submission	Response / Comment
	<ul style="list-style-type: none"> <li>Adjust reference to NI statistics report which has now been updated for 2022. Table C4. Link. <i>Northern Ireland Environmental Statistics Report</i> (daera-ni.gov.uk).</li> </ul>	Suggestion has been noted and this has been updated in Section 4.11 of the SEA ER.
	<ul style="list-style-type: none"> <li>In considering the potential transboundary effects, the SEA should take into account impacts on both designated and non-designated heritage assets.</li> </ul>	Designated and non-designated heritage assets were considered throughout the assessment.
	<ul style="list-style-type: none"> <li>HED welcomes that the Historic Environment Map viewer has been acknowledged.</li> </ul>	Comment on the Historic Environment Map is noted.
	<ul style="list-style-type: none"> <li>DAERA SEA Team is content that the environmental report and the process of consultation follow the SEA Directive.</li> <li>A description of the current state of the environment and how this relates to the proposed Framework is included within the environmental report.</li> </ul>	Comments on the SEA ER are noted.
	<ul style="list-style-type: none"> <li>Appropriate environmental objectives / targets / indicators for each of the likely environmental receptors is addressed including consideration of alternatives, an assessment of significant impact and complemented with mitigation measures and monitoring programme.</li> </ul>	Comments on the environmental objectives / targets / indicators are noted.
3. Department of Agriculture, Environment and Rural Affairs (DAERA): Northern Ireland Environment Agency (NIEA)	<ul style="list-style-type: none"> <li>NIEA Natural Environment Division works to ensure that Northern Ireland's special natural environment, including its flora and fauna and landscapes, is conserved, enhanced and managed for the benefit of this and future generations, thereby contributing to sustainable development.</li> <li>NED welcome that transboundary issues for the natural environment / heritage and transboundary issues for NI designated sites has been given consideration.</li> <li>NED welcome the proposed monitoring and mitigation and provided it will be applied to transboundary cases and engagement with NI continues NED are content.</li> <li>NED notes that some of the cycle routes extend into NI and welcome that Environmental Impact Assessment and Appropriate Assessment will be carried out as appropriate at project level and we advise continued and early engagement with the relevant bodies in NI as appropriate and should there be any potential transboundary effects on NI.</li> </ul>	Comments on the natural environment / heritage and transboundary issues in the SEA ER are noted.
	<p><b>Water Management Unit (WMU)</b></p> <ul style="list-style-type: none"> <li>Welcomes recognition of the issue of water management in NI through transboundary consideration.</li> </ul>	Comments on water management are noted.
	<p><b>Water Management Unit (WMU)</b></p> <ul style="list-style-type: none"> <li>Detailed mitigation measures should be developed and embedded in any EIA, AA and scheme proposal to be undertaken where potential likely significant effects relating to the aquatic environment are identified.</li> </ul>	Suggestions for detailed mitigation measures are noted.
	<p><b>Water Management Unit (WMU)</b></p> <ul style="list-style-type: none"> <li>The final SEA Adoption Statement will include the measures decided upon to monitor the significant environmental effects of implementing of the plan.</li> </ul>	Comments on the SEA Adoption Statement are welcomed. Monitoring is included in Section 5.
	<p><b>Water Management Unit (WMU)</b></p> <ul style="list-style-type: none"> <li>The implementation of the Plan must be considered against the most appropriate monitoring measures in relation to both water quality and quantity.</li> </ul>	Suggestions on appropriate monitoring measures for both water quality and quantity are welcomed. Monitoring is included in Section 5.

Environmental Authority	Summary of Submission	Response / Comment
	<ul style="list-style-type: none"> <li>WMU consider it essential that associated trigger actions and interventions (including plan revisions where required) are undertaken if any unforeseen or adverse environmental effects to the aquatic environment are identified as a result of the Plan.</li> </ul>	
	<b>Drinking Water Inspectorate (DWI)</b>	
	<ul style="list-style-type: none"> <li>Although there is a mention of Protected Areas under the WFD, there is no discussion with respect to how these may be impacted and any relevant protection.</li> </ul>	The high-level strategic nature of the NCN Plan does not lend itself to assessment at this level of detail.
	<b>Drinking Water Inspectorate (DWI)</b>	
	<ul style="list-style-type: none"> <li>We would encourage consultation with Northern Ireland Water Limited to discuss the location of the Cycle Network to ensure there is negligible impact to drinking water protected areas.</li> <li>This will be important with respect to the annual report on sustainable water - a long term water strategy for Northern Ireland (2015 – 2040).</li> </ul>	The high-level strategic nature of the NCN Plan would not enable detailed discussions to take place on this basis.
	<b>Climate Change Mitigation Branch</b>	
	<ul style="list-style-type: none"> <li>Revise recently passed Climate Change Bill (Northern Ireland) 2022.</li> </ul>	Suggestion to update reference is noted and this has been added to the SEA ER.
	<b>Marine Plan Team (MPT)</b>	
	<ul style="list-style-type: none"> <li>It is noted that while the NCN Plan does not include specific or detailed routes, it does identify broad corridors through which interventions should be targeted.</li> </ul>	Comment has been noted.
	<b>Marine Plan Team (MPT)</b>	
	<ul style="list-style-type: none"> <li><b>SEA ER</b> – the MPT were concerned not to see any corresponding information on relevant documents applicable to the immediately adjoining NI waters.</li> <li>The MPT would consider that by not including the relevant marine aspects within this iterative ER, then it appears that the opportunities for the marine area and potential associated transboundary issues have not been considered.</li> <li>The MPT have reviewed the brief transboundary section on pg 98 and suggest it would have been beneficial to have had a more comprehensive section that specifically listed and analysed potential transboundary effects, whilst recognising the strategic level of the NCN Plan.</li> </ul>	Marine designations have been considered for the potential NCN corridors which may affect them.
	<b>Marine Plan Team (MPT)</b>	
	<ul style="list-style-type: none"> <li>Suggest that the following NI relevant legislation and plans are included: <ul style="list-style-type: none"> <li>the Marine and Coastal Access Act 2009;</li> <li>the Marine Act (Northern Ireland) 2013;</li> <li>the UK Marine Policy Statement (MPS); and</li> <li>the draft Marine Plan for Northern Ireland.</li> </ul> </li> </ul>	Suggestion to include list of NI legislation is noted and has been included in Table 3.4 of the SEA ER.
	<b>Marine Plan Team (MPT)</b>	
	<ul style="list-style-type: none"> <li>The UK Marine Policy Statement 2011 and the draft Marine Plan for Northern Ireland published in April 2018 are both available on the DAERA website.</li> <li>The DAERA Marine Viewer (see link below) contains relevant NI marine mapping on a range of marine topics which you may find useful <a href="http://www.daera-ni.gov.uk/services/marine-mapviewer">www.daera-ni.gov.uk/services/marine-mapviewer</a></li> </ul>	Comments are on UK policy / plan is noted and these have been added to Section 3.4 of the SEA ER. Suggestion for dataset is welcomed.

Environmental Authority	Summary of Submission	Response / Comment
4. Geological Survey Ireland (GSI)	<ul style="list-style-type: none"> <li>We recommend using these various data sets, when conducting the EIAR, SEA, planning and scoping processes.</li> </ul>	Noted. These datasets have been considered in the SEA and planning process.
	<ul style="list-style-type: none"> <li>Use of our data or maps should be attributed correctly to 'Geological Survey Ireland'.</li> </ul>	Comment on GSI maps and data is noted.
	<ul style="list-style-type: none"> <li>In Table 1: 'Summary of Scoping Submissions', we note the listing of our datasets in our previous submission 22/70 and would welcome their inclusion in the final SEA Report.</li> </ul>	Datasets have been considered.
5. Department of Housing, Local Government and Heritage - National Parks and Wildlife Services (NPWS)	<ul style="list-style-type: none"> <li>The observations are not exhaustive and are offered to assist Transport Infrastructure Ireland (TII) in meeting its obligations in relation to nature conservation, European sites, biodiversity and environmental protection in the context of the National Cycle Network Plan (NCN).</li> </ul>	Comment on submission is noted.
	<ul style="list-style-type: none"> <li>Whilst it is stated in the SEA Environmental Report (ER) that the Development Applications Unit (DAU) was consulted at the scoping stage in the SEA process under article 11 of the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004, S.I. No.435 of 2004, as amended, the DAU does not appear to have received a scoping consultation request.</li> </ul>	Comment on submission is noted.
	<ul style="list-style-type: none"> <li>In addition, DAU did not receive a request to provide submissions on the Draft NCN and the SEA ER but acknowledges that the TII has provided an opportunity for the NPWS to provide observations on these documents.</li> </ul>	Comment on submission is noted.
	<ul style="list-style-type: none"> <li>The Department is available to meet the TII to clarify any of the observations made below before the final NCN Plan is approved.</li> </ul>	Suggestion on consultation is noted.
	<b>Comments on the Draft NCN Plan</b>	
	<ul style="list-style-type: none"> <li>Whilst the NCN is welcomed, there is a need to identify and address the same risks to biodiversity that are associated with cycle network developments as with any other road or infrastructure development.</li> </ul>	Comment has been noted.
	<ul style="list-style-type: none"> <li>The Department wish to highlight the importance of identifying, describing and assessing the ecological constraints early in the development of design proposals that are likely to have significant effects to European or Nationally important sites.</li> </ul>	
	<ul style="list-style-type: none"> <li>Appropriate ecological expertise should be available early in this design process.</li> </ul>	
	<ul style="list-style-type: none"> <li>The protection of these linear and continuous features of the landscape are essential for improving the ecological coherence of the Natura 2000 network, and for the migration, dispersal and genetic exchange of wild species.</li> </ul>	
	<b>Comments on the Draft NCN Plan</b>	
	<ul style="list-style-type: none"> <li>The Draft NCN outlines 5 policy goals and 19 plan objectives.</li> </ul>	Comment has been noted.
	<ul style="list-style-type: none"> <li>Whilst NCN Plan Objective 1.2 states "Enhance local environments and biodiversity where possible (e.g., pollinator plans, green corridors)", it is felt that this does not reflect the strong commitments made in the National Biodiversity Action Plan whereby the mainstreaming biodiversity into decision-making in all sectors is a key objective.</li> </ul>	
	<b>Comments on the Draft NCN Plan</b>	
	<ul style="list-style-type: none"> <li>The Department recommends that a new policy goal and a series of objectives is included to ensure that TII can meet its International, European and National obligations in relation to the protection and restoration of biodiversity, the Department recommends that the plan is updated to include a clear biodiversity protection policy with clear and robust objectives:</li> </ul>	Comment has been noted and requirements have been incorporated into the NCN Plan implementation approach.
	<p><b>Recommended Biodiversity policy goal:</b> Ensure the protection and enhancement of biodiversity is embedded in all cycleway infrastructure proposals.</p>	
	<p><b>Recommended NCN biodiversity objectives:</b></p>	

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## Summary of Submission

## Response / Comment

- All cycleway developments arising or funded under the NCN plan will undergo a robust route selection process to ensure environmental constraints are avoided.
- All plans and projects arising or funded under the NCN plan will be informed by appropriate ecological expertise early in the process; from strategic planning, route selection to final project design and implementation.
- All plans and projects arising or funded under the NCN plan will be subject to the statutory requirements to undergo the relevant environmental assessments (SEA, EIA and AA).
- Where developments, arising from this NCN plan, do not require statutory Environmental Impact Assessment, impacts to biodiversity will be assessed by the preparation of a Ecological Impact Assessment (EclA) Report which will inform the detailed design, construction and operation of the development.
- All plans and projects arising or funded under the NCN plan will include measures to protect existing biodiversity features and to promote biodiversity enhancement.

**Comments on the SEA Environmental Report**

- Section 3.2 Key Sustainability issues notes that “New strategic cycle infrastructure has the potential to lead to habitat loss, the disturbance of species and fragmentation of ecological networks” and also that “The development of a NCN also offers opportunities for enhancing linkages between habitats and delivering net gains for biodiversity.”
- The SEA process should include a scientific evaluation of both of these constraints and opportunities for each of the corridors that have been appraised.
- Such an assessment should have used environmental sensitivity mapping to generate greater clarity onto the magnitude and significance of the impacts for each of the routes.

Due to the high-level nature of plan proposals are such that a scientific evaluation is not appropriate.

A strategic level assessment which meets the requirements of the SEA Regulations has been undertaken, in recognition of the high-level nature of the NCN Plan.

**Comments on the SEA Environmental Report**

- It is noted within Section 5.3 Mitigation Measures of the ER that “given the high-level nature of the corridors proposed for the NCN, it is not possible to propose specific mitigation measures for each corridor. It is also not possible to propose specific enhancement measures.” However, examples of mitigation and enhancement measures have been outlined in the ER and the Department recommends that these are integrated into the text of the final plan and wherever possible, are tailored for each of the proposed corridors so that if they are progressed at subsequent stages, they will be obliged to adopt the recommended mitigation stated in the adopted version of the NCN.

Comment has been noted and mitigation measures have been incorporated into the Final NCN Plan.

**Comments on the SEA Environmental Report**

- An appraisal has been carried out for each of the identified 90 route corridors within **Appendix D: Corridor options assessment tables**. Impacts on European sites is described as being “uncertain”. It is not clear why there is uncertainty as it would have been possible to list the types of impacts that could arise –based on an assumption that development could take place anywhere within the corridor.
- It is recommended that the adopted Plan presents the preferred corridors and describes them fully in terms of the types of impacts that may arise and the appropriate strategic mitigation measures that will be employed at subsequent stages to avoid impacts on European sites.
- The adopted Plan and the SEA Statement must clearly state how biodiversity will be protected and enhanced during subsequent stages of plan implementation.

The high-level nature of plan proposals mean that effects are uncertain, especially with the precautionary principle applied.

**Comments on the SEA Environmental Report**

- The adopted Plan and the SEA Statement must clearly state how biodiversity will be protected and enhanced during subsequent stages of plan implementation.

The SEA Statements outlines a recommended monitoring programme. A strategic level assessment which meets the requirements of the SEA Regulations has been undertaken, in

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## Summary of Submission

## Response / Comment

	Response / Comment
	recognition of the high-level nature of the NCN Plan.
<p><b>Comments on the SEA Environmental Report</b></p> <ul style="list-style-type: none"> <li>Section 5.3 Mitigation Measures within the ER provides examples of mitigation and enhancement measures for consideration during development schemes, however, these measures have not been considered or incorporated into the appraisal of each route corridor as outlined in Appendix D.</li> <li>It is understood that specific impacts and mitigation measures for each route will be assessed at project stage, but it is imperative that the adopted plan provides a basis on how to avoid, reduce or minimize impacts to biodiversity at a strategic level.</li> </ul>	<p>The assessment has taken a policy off approach given detailed measures will be worked up as detailed schemes progress and are developed.</p> <p>The NCN Plan provides an appropriate framework for avoidance and mitigation measures related to biodiversity to be implemented at a lower level of the plan/project hierarchy.</p>
<p><b>Comments on the SEA Environmental Report</b></p> <ul style="list-style-type: none"> <li>Cycleways, if designed with appropriate biodiversity protection and enhancement measures, have the potential to benefit biodiversity and this is acknowledged in the ER.</li> <li>The Department recommends that the adopted plan includes data relating to the preferred route corridor to identify how biodiversity will be protected and enhanced during plan implementation.</li> </ul>	<p>Comment has been noted.</p>
<p><b>Comments on the SEA Environmental Report</b></p> <ul style="list-style-type: none"> <li>Monitoring is an important step in the SEA process and a requirement under Article 10 of the Strategic Environmental Assessment (SEA) Directive 2001/42/EC.</li> <li>The Department notes that the measures required to monitor the environmental effects of the NCN plan will be included within the SEA statement and are not currently available for observations.</li> </ul>	<p>The SEA Adoption Statement includes monitoring measures in Section 5.</p>
<p><b>Comments on the SEA Environmental Report</b></p> <ul style="list-style-type: none"> <li>The Department recommends, when considering monitoring measures, that impacts to biodiversity, both in terms of biodiversity loss and biodiversity enhancement, are adequately measured.</li> </ul>	<p>The SEA Adoption Statement includes monitoring measures in Section 5</p>
<p><b>Comments on the SEA Environmental Report</b></p> <ul style="list-style-type: none"> <li>A robust monitoring plan will ensure TII can meet its International, European and National obligations in relation to biodiversity and ensure there is no net contribution to biodiversity losses or deterioration due to plan implementation. The proposed monitoring programme must also include proposals for corrective actions that will be implemented if impacts to European sites are recorded arising from developments supported by the Plan.</li> </ul>	<p>Comments on monitoring is noted. The SEA Adoption Statement includes Monitoring measures in Section 5.</p>
<p><b>Comments on likely significant effects on European sites</b></p> <ul style="list-style-type: none"> <li>The NPWS has provided comments on individual proposals for cycleway developments, many of which pass through or close to European sites. Some European sites are particularly vulnerable to the impacts of the construction and operation of cycleway developments due to their location, (e.g., European sites that cover river and coastal habitats) makes them attractive places to select as cycle routes.</li> <li>The most recent NPWS, 2019, on European protected habitats and species in Ireland, identified recreational infrastructure and leisure activities as a substantial threat and pressure to a large number of European sites. Many of these European sites overlap with, or ecologically linked to, a number of proposed cycle corridors mapped within the Draft NCN plan and the SEA ER.</li> </ul>	<p>An NIR has been prepared for the Plan.</p>



Environmental  
Authority

## Summary of Submission

## Response / Comment

- It is noted that, at the time of writing, the process of determining if the Draft NCN requires an appropriate assessment (AA) under the EU Habitats Directive has not been concluded.

**Comments on likely significant effects on European sites**

- The Department advises that where there are clearly identified locations for potential developments identified in a strategic plan (such as the proposed corridors) and where likely significant effects of those developments on European sites cannot be ruled out, then it is necessary to explore the proposed developments at a strategic stage in the form of an AA.

An NIR has been prepared for the Plan.

**Comments on likely significant effects on European sites**

- The SEA ER has identified and mapped 90 route corridors which run across or adjacent to a large number of European sites. In the context of undertaking screening for AA the Department would like to reiterate the importance of TII applying the precautionary principal, i.e., if likely significant effects on any European site, either individually or in combination with other plans or projects, cannot be ruled out at the screening stage then the plan should be subject to appropriate assessment.
- This is particularly relevant to the outcome of the corridor options assessments presented in Appendix D of the ER where impacts on biodiversity are described as being “uncertain”.

An NIR has been prepared for the Plan.

**Comments on likely significant effects on European sites**

- Some of these corridors may not be capable of passing the “AA test” at the project stage due to the sensitivities of the European sites through which they pass and therefore such considerations should be made at the strategic stage where other corridors are available to assess.
- In cases where a preferred corridor may have adverse effects on the integrity of the European site but the proponent still wishes to progress it, it may only be given consent if none of the other alternative corridors are less damaging in terms of the European sites, as well as fulfilling the other strict tests listed under Article 6(4) of the EU Habitats Directive.

An NIR has been prepared for the Plan.

**Comments on likely significant effects on European sites**

- In Appendix D in the SEA ER, the corridor options assessment repeatedly states that “Any works within or adjacent to the designated sites could result in potential significant impacts” and “These designated sites and key sensitivities associated with the designations would need to be considered when determining the final route during scheme development”, it is therefore, apparent that a risk of likely significant effects on European sites has already been identified (albeit as part of the SEA process) and therefore that the draft Plan will require an AA.

An NIR has been prepared for the Plan.

**Comments on likely significant effects on European sites**

- “NED are in agreement and welcome the completion of a Habitats Regulations Assessment (AA) in parallel to the SEA.”

An NIR has been prepared for the Plan.

**Comments on likely significant effects on European sites**

- As stated above, we would welcome the opportunity to meet with you to discuss some of the point raised above and to discuss some of the ecological issues that have been encountered during the scrutiny of proposal cycle network developments across Ireland in the last few years.

Comment has been noted.

## 4. Summary of Alternatives Considered

### 4.1 Introduction

Article 5 of the SEA Directive requires the consideration of reasonable alternatives, taking into account the objectives and the geographical scope of the plan or programme and the significant environmental effects of the alternatives proposed. Consideration and evaluation of the likely environmental consequences of alternative plan approaches is an important aspect of the SEA process.

The SEA Regulations are not prescriptive about what constitutes a reasonable alternative, stating only that the Environmental Report should “...*identify, describe and evaluate the likely significant effects on the environment of implementing the plan or programme...and reasonable alternatives taking account of the objectives and the geographical scope of the plan or programme.*”

The NCN Plan alternatives were subject to environmental assessment and the results of this can be found in Chapter 6 of the SEA ER.

### 4.2 Limitations in Available Alternatives

It is important to acknowledge the limitations of the approach undertaken for the assessment. These limitations relate to both the scope and coverage of the corridor options and the nature of the SEA process.

The following considerations apply to the assessment:

- **High level nature of corridor options:** The corridor options are not designed to set out detailed routes for cycle infrastructure. They are instead intended to identify broad corridors through which interventions should subsequently be targeted. In this respect the assessment focusses on the key environmental constraints which may affect each corridor option, without going into significant detail of likely impacts. This approach reflects the high-level nature of the corridors being proposed.
- **Subsequent scheme definition and design:** Likely scheme definition and the subsequent scheme design activities can lead to uncertainties as to the resultant impact. In such situations it is recognised that potential impacts identified in the SEA may be avoided or mitigated during subsequent scheme design activities.
- **Embedded mitigation:** Linked to the above, potential impacts on environmental receptors may be reduced with the application of embedded mitigation required by national legislative and regulatory provisions during the design phase. With the

incorporation of embedded mitigation measures there would likely be opportunities to reduce any potential significant negative impacts that may arise. In this respect the assessments of the corridor options do not seek to apply embedded mitigation which is likely to be required.

### 4.3 Assessment of Reasonable Alternatives for the NCN Plan

This stage centred on fulfilling the key requirement of the SEA Directive: *“Where an environmental assessment is required... an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated”*.

A key focus during the development of the NCN Plan was on the establishment of broad corridors approximately 4km wide through which interventions should subsequently be targeted.

A range of options were considered as potential corridors. The corridor options (totalling in the region of 90 options) had regard to the NCN objectives and feasible connections between two nodes (defined destinations). Specifically, the options were assessed based on estimated demand, safety, integration with existing and planned cycle infrastructure, social inclusion, and connectivity to smaller settlements, transport modes and tourist attractions.

To support the consideration of these corridor options, the options were assessed through the SEA process as reasonable alternatives. The purpose of this exercise was to identify, at a high level, the likely environmental constraints and considerations that would need to be taken into account if a potential corridor was subsequently taken forward as part of the NCN Plan.

The findings of the assessment of reasonable alternatives were then presented in the SEA Environmental Report, which accompanied consultation on the draft NCN Plan in May 2022.

### 4.4 Summary of Evaluation of Alternatives

Section 6.5 of the SEA Environmental Report provides a summary of the evaluation of alternatives.

## 5. Monitoring Measures

### 5.1 Introduction

Article 10 of the SEA Directive 2001/42/EC requires that monitoring be carried out in order to identify early on any unforeseen adverse effects due to the implementation of the plan and to be able to undertake appropriate remedial action.

This section details the measures that will be used in order to monitor the likely and potential significant effects of implementing the NCN Plan. It has been guided by EPA guidance, *Guidance on SEA Statements and Monitoring*<sup>11</sup>.

Monitoring is a key element of the effective implementation of a plan. Monitoring allows for cross checking of significant effects which may arise during the implementation stage of the plan against those predicted during the plan preparation stage. Monitoring shall be based on environmental objectives, target and indicators.

Given the high-level nature of the corridors proposed for the NCN Plan, it is not possible to propose specific mitigation measures for each corridor. It is also not possible to propose specific enhancement measures. Detailed mitigation and enhancement opportunities would instead be developed as part of the design and consenting process at the scheme level, and embedded mitigation measures will be required alongside scheme development. In addition, where appropriate, project level Environmental Impact Assessment (EIA) and Appropriate Assessment (AA) would be undertaken for individual schemes where likely significant effects arise; these will also identify appropriate scheme-level mitigation measures.

In this respect monitoring of the NCN Plan will be linked to its implementation through scheme development. As such the recommended monitoring programme below (**Table 5.1**) sets out suggestions for the types of indicators that can be monitored as the NCN Plan is implemented.

Both the positive and negative effects of the Plan on the environment are to be considered in the monitoring programme. If monitoring identifies a regular frequency of a negative significant environmental effect, then more frequent monitoring and reporting may be required to determine if remedial action is effective in addressing the negative effect.

### 5.2 Indicators

Monitoring is based around indicators which allow quantitative measures of trends and progress over time relating to the Strategic Environmental Objectives (SEOs) identified in the SEA Environmental Report and used in the evaluation. Indicators which measure changes in

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<sup>11</sup> EPA (2020). *Guidance on SEA Statements and Monitoring*.

the environment, especially changes which are critical in terms of environmental quality, for example water or air pollution levels.

Environmental indicator assessment during monitoring can show positive / neutral impacts or negative impacts on the environment. Where an indicator value highlights a positive / neutral impact on the environment, it is likely that this element of the Plan is well defined with regard to the environment. Equally, where the Plan has a negative impact on the environment, it may be necessary to review the Plan or to take some other form of intervention. A list of recommended environmental indicators is provided in **Table 5.1**.

### 5.3 Targets

Each indicator to be monitored is accompanied by target(s) which were identified with regard to the relevant strategic actions. Environmental indicators are used to track the process in achieving the targets. **Table 5.1** sets out the targets that have been recommended 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. Monitoring may also be updated to deal with specific environmental issues.

TII is responsible for the ongoing review of targets and indicators, 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.

### 5.4 Sources, Reporting and Frequency

Measurements for indicators generally come from existing monitoring sources. Existing monitoring sources include those maintained by the relevant authorities including the:

- Environmental Protection Agency (EPA),
- National Parks and Wildlife Service (NPWS); and
- Central Statistics Office (CSO).

**Table 5.1** sets out the targets, indicators and sources that are recommended for monitoring the likely significant environmental effects of implementing the Plan. TII will be responsible for the ongoing review of indicators and targets.

**Table 5.1: Targets, Indicators and Sources**

SEA Theme	Targets	Indicators	Sources and Frequency (if available)
<b>Biodiversity</b>	Maintenance of favourable conservation status for all habitats and species protected under National and International legislation to be unaffected by implementation of the Plan	Conservation status of habitats and species as assessed under Article 17 of the Habitats Directive	<ul style="list-style-type: none"> <li>• NPWS reporting</li> <li>• Government National Monitoring Report for the Birds Directive under Article 12 (every 3 years)</li> </ul>
	No reduction in habitat diversity or loss of species in non-designated sites as a result of implementing the NCN Plan	Area of direct impacts on European Sites affected by implementation of Plan	<ul style="list-style-type: none"> <li>• SEA Monitoring Programme reports for the land use plans of relevant local authorities</li> <li>• Lower tier environmental assessment and decision making by local authorities</li> </ul>
	No significant impacts on the protection of listed species resulting from the Plan	Number of significant impacts on the protection of listed species	<ul style="list-style-type: none"> <li>• Review of EPA Ecological Network Mapping (if available)</li> </ul>
	Comply with the strategic objectives of the National Biodiversity Action Plan	Key findings and reporting of the National Biodiversity Action Plan	<ul style="list-style-type: none"> <li>• CORINE mapping resurvey (every c. 5 years)</li> <li>• County and City Development Plan Reporting (relevant to biodiversity)</li> </ul>
	No significant impacts on locally important biodiversity	Impact on biodiversity from Plan cycling schemes	<ul style="list-style-type: none"> <li>• Biodiversity Action Plan Reporting</li> </ul>
	Prevent the introduction of invasive species into new areas	Any new records of invasive species reported	<ul style="list-style-type: none"> <li>• NIEA / Local Councils: Local Biodiversity Action Plans</li> </ul>
	No unnecessary impacts on existing (local) hedgerows / trees	Biodiversity impacts on locally known species	<ul style="list-style-type: none"> <li>• NIEA: Conservation Action Plans</li> <li>• DAERA reporting on Habitats and Species</li> </ul>
<b>Population and Human Health</b>	Time taken to travel to cultural facilities, tourist destinations and services, including for disadvantage	Increase in the proportion of people reporting cycling to cultural facilities, tourist destinations, services above 2016 CSO figures	<ul style="list-style-type: none"> <li>• Central Statistics Office (CSO)</li> <li>• TII</li> </ul>
	Time taken to travel to work / school / college, including for disadvantaged	Increase in the proportion of people reporting regular cycling to school / work / college above 2016 CSO figures	<ul style="list-style-type: none"> <li>• Road Safety Authority (RSA)</li> <li>• Local Authorities</li> </ul>
	Improvement in access and availability of cycle routes	Increases and improvements in quality of accessible public cycle routes User satisfaction surveys Extent of cycling networks delivered (km)	<ul style="list-style-type: none"> <li>• Lower tier environmental assessment and decision making by local authorities</li> <li>• Health Service Executive (HSE)</li> <li>• NI Census population</li> <li>• Department for Infrastructure (NI)</li> </ul>
	Increased numbers of cyclists	Mode split for cycling Self-reported health statistic	<ul style="list-style-type: none"> <li>• Public Health Agency (PHA)</li> <li>• Northern Ireland Statistics and Research Agency</li> </ul>
<b>Land, Soils and Geology</b>	Minimise damage or loss of soil resources and land use	Land cover changes	<ul style="list-style-type: none"> <li>• EPA</li> <li>• GSI</li> <li>• CORINE mapping resurvey (every c. 5 years)</li> </ul>

SEA Theme	Targets	Indicators	Sources and Frequency (if available)
	Retain or increase the conservation status of important geological sites throughout the county	Impacts on designated geological and geomorphological sites by the Plan	<ul style="list-style-type: none"> <li>Local Area Plans and Development Plan data (incl. SEA monitoring)</li> <li>SEA Monitoring Programme reports for the land use plans of relevant local authorities</li> </ul>
	Dispose of contaminated material in compliance with EPA guidance and waste management requirements	Number of incidences of non-compliant contamination breaches	<ul style="list-style-type: none"> <li>GSNI Reporting</li> <li>NIEA</li> <li>DAERA</li> </ul>
<b>Water</b>	Not to cause deterioration in the status of any waterbodies or affect the ability of any waterbody to achieve 'good status'	No deterioration in the status of any waterbodies as reported by the EPA Water Monitoring Programme for the WFD Change of status of waterbodies	<ul style="list-style-type: none"> <li>EPA Monitoring Programme for WFD compliance</li> <li>Local Authorities</li> <li>Flood Risk Management Plans</li> <li>NIEA</li> <li>NI Water Data</li> </ul>
	No deterioration in WFD Register of Protected Areas	Change of status to WFD Register of Protected Areas	
	All waterbodies to meet targets set in River Basin Management Plan for Ireland	Implementation of the objectives of the of the River Basin Management Plan (and subsequent iterations as relevant	
	No additional recorded occurrences of flooding as a result of the cycle network plan	Flood risk Number, extent and location of flood events	
	Reduction in run-off pollution from motorised vehicles	Applicable monitoring data	
<b>Air Quality</b> and <b>Climate Change</b>	To contribute towards compliance with legislative air quality limits and target values	Compliance with Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive and associated legislation	<ul style="list-style-type: none"> <li>EPA Monitoring and publications on Air Quality and Greenhouse gas emissions</li> <li>CSO</li> <li>County and City Development Plan Reporting (relevant to air and climate)</li> <li>Data from travel survey's</li> <li>NIEA</li> <li>Air Quality NI</li> <li>DAERA</li> <li>Climate Change Committee</li> </ul>
	To facilitate a reduction in greenhouse gas emissions from cars	Greenhouse gas emissions from transport Air quality monitoring reports	
	Improvement in Air Quality	Changes in NOx, SOx, PM10 and PM2.5 as part of Ambient Air Quality Monitoring	
	Percentage of population travelling to cultural facilities, tourist destinations and services	Increase in the proportion of people reporting cycling to cultural facilities, tourist destinations, services above 2016 CSO figures	
	Sustainable transport	Cycle infrastructure	
<b>Cultural Heritage</b>	No unauthorised adverse effects on archaeological heritage resulting from implementation of the Strategy	Percentage of entries to the Record of Monuments and Places protected from significant adverse effects arising from the Strategy	<ul style="list-style-type: none"> <li>National Monument Services (NMS) / Record of Monuments and Places</li> <li>NIAH</li> <li>Heritage Ireland</li> <li>Local Authorities</li> </ul>
	Ensure that the cultural heritage of the Plan is maintained and protected from damage or deterioration	Number of archaeological sites investigated/ number of planning applications screened	

SEA Theme	Targets	Indicators	Sources and Frequency (if available)
	Protecting Built Heritage	Number of additions / deletions / amendments to RPS Number of ACA's adopted Number of Buildings at Risk files opened / closed	<ul style="list-style-type: none"> <li>• County and City Development Plan Reporting (relevant to cultural heritage)</li> <li>• EPA</li> <li>• NIEA</li> <li>• NI Heritage</li> <li>• Built Heritage at Risk in Northern Ireland</li> <li>• Historic Environment Division (HED)</li> </ul>
<b>Landscape and Visual</b>	Minimise impacts on landscape and townscape	Minimise impacts on landscape and townscape	<ul style="list-style-type: none"> <li>• EPA</li> <li>• CORINE mapping resurvey (every c. 5 years)</li> <li>• County and City Development Plan Reporting (relevant to landscape)</li> <li>• National Landscape Strategy</li> <li>• NIEA</li> <li>• DAERA - Landscape Character of Northern Ireland</li> </ul>



# Appendix A Summary of Scoping Submissions

**Table 1: Summary of Scoping Submissions**

Environmental Authority	Summary of Submission	Response / Comment
<b>1. Department of Environment, Climate and Communications (DECC). (Environmental Protection and Circular Economy – Materials Management Divisions)</b>	<ul style="list-style-type: none"> <li>To include the Whole of Government Circular Economy Strategy 2022-2023 amongst the plans, policies referenced.</li> </ul>	<p>Strategy considered within the assessment. Specific comments are noted and addressed. Strategy has been considered and incorporated into the SEA Environmental Report as appropriate.</p>
<b>2. Geological Survey Ireland under DECC</b>	<ul style="list-style-type: none"> <li>GSI recommend using these various data sets, when conducting the EIAR, SEA, planning and scoping processes. Use of our data or maps should be attributed correctly to 'Geological Survey Ireland' (GSI).</li> <li>GSI would encourage use of and reference to our datasets.</li> <li>A list of our publicly available datasets that may be useful to the environmental assessment and planning process.</li> <li>GSI recommend that you review this list and refer to any datasets you consider relevant to your assessment.</li> </ul> <p><b>Geoheritage</b></p> <ul style="list-style-type: none"> <li>GSI welcome reference to our audited and unaudited geological heritage sites in Section 5.6.4.1 'Geological Heritage', of the draft SEA Report.</li> <li>Important geological and geomorphological sites throughout the country for designation as geological NHAs (Natural Heritage Areas). Addressed by the Geoheritage Programme in GSI.</li> <li>Currently 27 local authority areas have completed geological heritage audits, and a further three are currently under way, (Limerick, Cork County and Cork City), creating an almost national level of audited sites. Completed audits for other counties and local authority areas can be viewed on the Map viewer.</li> </ul> <p><b>Culture and Tourism</b></p> <ul style="list-style-type: none"> <li>Geoparks have bolstered tourism in various parts of Ireland and helped to increase its levels in areas that were previously not as popular with tourists. We would encourage TII to develop the promotion of the geological value of sites close to cycle infrastructure.</li> </ul> <p><b>Groundwater</b></p> <ul style="list-style-type: none"> <li>GSI has completed Groundwater Protection Schemes (GWPSs) in partnership with Local Authorities, and there is now national coverage of GWPS mapping. GSI recommend using the groundwater maps on the Map viewer.</li> <li>GWClimate is a groundwater monitoring and modelling project. This data may be useful in relation to Flood Risk Assessment (FRA) and management plans. Maps and data are available on the Map viewer.</li> <li>GSI has completed Groundwater Protection Schemes (GWPSs).</li> </ul> <p><b>Geological Mapping</b></p>	<p>Suggestions for datasources and guidelines and comments have been taken into account and considered through the assessment stages.</p>

Environmental Authority	Summary of Submission	Response / Comment
	<ul style="list-style-type: none"> <li>• GSI maintains online datasets of bedrock and subsoils geological mapping that are reliable and accessible.</li> <li>• GSI would encourage the use this data.</li> <li>• Information on the bedrock and Quaternary 3D models of Dublin is available.</li> <li>• Information and download instructions for the Quaternary 3D model of Cork is available.</li> </ul> <p><b>Geotechnical Database Resources</b></p> <ul style="list-style-type: none"> <li>• GSI encourage the use of the national geotechnical database and viewer as part of any baseline geological assessment of the proposed development as it can provide invaluable baseline data for the region or vicinity of proposed development areas.</li> <li>• This information may be beneficial and cost saving for any site-specific investigations that may be designed as part of any cycle infrastructure development projects.</li> </ul> <p><b>Geohazards</b></p> <ul style="list-style-type: none"> <li>• GSI recommend that geohazards be taken into consideration, especially when developing areas where these risks are prevalent, and we encourage the use of our data when doing so.</li> <li>• GSI has information available on landslides in Ireland via the National Landslide Database and Landslide Susceptibility Map.</li> <li>• GSI has engaged in a national project on Groundwater Flooding. The data from this project may be useful in relation to Flood Risk Assessment (FRA) and management plans.</li> </ul> <p><b>Natural Resources (Minerals/Aggregates)</b></p> <ul style="list-style-type: none"> <li>• GSI highlights the consideration of mineral resources and potential resources as a material asset which should be explicitly recognised within the environmental assessment process.</li> <li>• GSI provides data, maps, interpretations and advice on matters related to minerals, their use and their development.</li> <li>• The Active Quarries, Mineral Localities and the Aggregate Potential maps are available on the Map Viewer.</li> <li>• GSI would recommend use of the Aggregate Potential Mapping viewer to identify areas of High to Very High source aggregate potential within the area.</li> <li>• GSI would recommend use of our data and mapping viewers to identify and ensure that natural resources used in the proposed cycle infrastructure development projects are sustainably sourced from properly recognised and licensed facilities, and that consideration of future resource sterilization is considered.</li> </ul> <p><b>Geochemistry of Soils, Surface Waters and Sediments</b></p> <ul style="list-style-type: none"> <li>• GSI note reference to potential issues to land, soil and geology in Section 5.6.6, and recommend use of the following datasets that may be of benefit.</li> <li>• GSI provides baseline geochemistry data for Ireland as part of the Tellus programme. Baseline geochemistry data can be used to assess the chemical status of soil and water at a regional scale and to support the assessment of existing or potential impacts of human activity on environmental chemical quality.</li> <li>• At present, mapping consists of the border, western and midland regions. Data is available at <a href="https://www.gsi.ie/en-ie/data-and-maps/Pages/Geochemistry.aspx">https://www.gsi.ie/en-ie/data-and-maps/Pages/Geochemistry.aspx</a> . This page also hosts urban geochemistry mapping (Dublin SURGE</li> </ul>	

Environmental Authority	Summary of Submission	Response / Comment
	<p>project), Geochemical Mapping of Agricultural and Grazing Land Soil of Europe (GEMAS) and litho-geochemistry (rock geochemistry) from southeast Ireland datasets. Geological Survey Ireland and partners are undertaking applied geochemistry projects to provide data for agriculture (Terra Soil), waste soil characterisation (Geochemically Appropriate Levels for Soil Recovery Facilities) and mineral exploration (Mineral Prospectivity Mapping).</p> <p><b>Historic Mines</b></p> <ul style="list-style-type: none"> <li>• The EPA, GSI and the former Exploration &amp; Mining Division undertook a joint project entitled "Historic Mine Site - Inventory and Risk Characterisation (HMS - IRC)". This project carried out detailed site investigations and characterisation on priority historic mine sites in the country.</li> <li>• A final report and a GIS geodatabase was produced on completion of the project. The project provides an understanding of the impacts of historic mining sites in Ireland and their status at the time of the study. Reports and maps are available.</li> </ul> <p><b>Marine and Coastal Unit</b></p> <ul style="list-style-type: none"> <li>• GSI Marine and Coastal Unit in partnership with the Marine Institute, jointly manages INFOMAR, Ireland's national marine mapping programme; providing key baseline data for Ireland's marine sector.</li> <li>• Of particular interest to tourism is the extensive database of shipwrecks mapped by the INFOMAR programme.</li> <li>• GSI recommend use of our Marine and Coastal Unit datasets available on our website and Map Viewer.</li> <li>• The Marine and Coastal Unit also participate in coastal change projects such as CHERISH (Climate, Heritage and Environments of Reefs, Islands, and Headlands) and are undertaking mapping in areas such as coastal vulnerability and coastal erosion. Further information is available.</li> </ul> <p><b>Coastal Vulnerability Index</b></p> <ul style="list-style-type: none"> <li>• GSI is undertaking a new coastal vulnerability mapping initiative.</li> <li>• Maps produced provide an insight into the relative susceptibility of the Irish coast to adverse impacts of sea-level rise through the use of a Coastal Vulnerability Index (CVI). Currently the project is being carried out on the east coast and will be rolled out nationally.</li> </ul> <p><b>Physiographic Units</b></p> <ul style="list-style-type: none"> <li>• Physiographic Units are cartographic representations of the broad-scale physical landscape of a region.</li> <li>• They are valuable for regional land-use planning, and in studies of the influence of physical landscape on the ecological environment.</li> <li>• This map is produced in support of the actions to be implemented in National Landscape Strategy for Ireland 2015-2025.</li> <li>• Physiographic Units map data can be viewed online under the Physiographic Units tab on the online Map Viewer.</li> </ul> <p><b>Guidelines</b></p> <p>The following guidelines may also be of assistance:</p> <ul style="list-style-type: none"> <li>• Institute of Geologists of Ireland, 2013. <i>Guidelines for the Preparation of the Soils, Geology and Hydrogeology Chapters of Geology in Environmental Impact Statements.</i></li> </ul>	

Environmental Authority	Summary of Submission	Response / Comment
3. Environmental Protection Agency (EPA)	<ul style="list-style-type: none"> <li>National Roads Authority, 2009. <i>Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.</i></li> </ul> <p><b>Other Comments</b></p> <ul style="list-style-type: none"> <li>Should development go ahead, GSI would much appreciate a copy of reports detailing any site investigations carried out.</li> <li>The data would be added to GSI's national database of site investigation boreholes, implemented to provide a better service to the civil engineering sector.</li> <li>GSI's Publicly Available Datasets Relevant to Planning, EIA and SEA processes, attached.</li> </ul>	
	<ul style="list-style-type: none"> <li>The EPA is one of the statutory environmental authorities under the SEA Regulations.</li> <li>Our role is to focus on promoting the full and transparent integration of the findings of the Environmental Assessment into the Plan and advocating that the key environmental challenges for Ireland are addressed as relevant and appropriate to the plan.</li> <li>Our functions as an SEA environmental authority do not include approving or enforcing SEAs or plans</li> <li>Submission highlights some additional key plans and programmes for consideration (Appendix 1), as well as some comments on the SEA objectives and some additional resources (Appendix II) that may assist the SEA.</li> <li>The EPA may provide additional comments upon receipt of the SEA Environmental Report and draft Plan at the next stage of the SEA process.</li> </ul> <p><b>State of the Environment Report – Ireland's Environment 2020</b></p> <ul style="list-style-type: none"> <li>In preparing the Plan and SEA, the recommendations, key issues and challenges described within our State of the Environment Report Ireland's Environment – An Integrated Assessment 2020 (EPA, 2020) should be considered, in preparing the Plan and SEA as relevant and appropriate.</li> <li>Chapter 11 - Environment and Transport. A sustainable mobility transformation is required, with the next decade crucial, whereby necessary journeys are made by sustainable modes such as walking, cycling and public transport, followed by using electric vehicles where unavoidable. Shifting to these modes is an essential part of a sustainable and climate-neutral transition for the transport sector.</li> <li>Chapter 14 - Environment, Health and Wellbeing. Providing health-promoting environments is an essential requirement for healthy, thriving and inclusive communities. Providing integrated health-promoting environments in urban planning can promote more active travel, reduce air pollution through the use of fewer private vehicles, act as quiet areas buffered from environmental noise and improve the physical and mental health of those cycling.</li> <li>Other chapters in the report relating to Air Quality (Chapter 3) and Noise (Chapter 4) may also be useful to consider in the preparation of the SEA.</li> </ul> <p><b>Transition to a low carbon climate resilient economy and society.</b></p> <p><b>Monitoring, Review &amp; Reporting:</b></p> <ul style="list-style-type: none"> <li>The Plan should include a commitment to implement the environmental monitoring programme and associated reporting. It would be useful to include a separate section on 'Monitoring, Review and Reporting' within the Plan, setting out the provisions for monitoring and reporting on the implementation of the Plan and any periodic reviews of</li> </ul>	<p>State of the Environment Report has been reviewed and information included in the updated baseline overview.</p> <p>The monitoring programme for the SEA process will be developed following consultation on the NCN Plan and set out in the SEA Adoption Statement.</p> <p>Limitations of the assessment process have been acknowledged in the Environmental Report.</p> <p>Policy and plan review and baseline information has been updated to reflect comments.</p> <p>Other comments have been considered in preparation of the Environmental Report and undertaking of the assessments.</p>

**Environmental Authority****Summary of Submission****Response / Comment**

the Plan. There may be merits in aligning the periodic reviews of the Plan with existing cyclical reporting e.g., Ireland's Environment, National Planning Framework, etc.

- In between review periods for the Plan, we recommend that Plan-related implementation reports are published annually, or biennially, as appropriate. We recommend aligning this Plan related monitoring / reporting with the environmental monitoring required under the SEA legislation.
- The SEA-related monitoring should address positive, negative and cumulative effects where they are likely to occur and should include provision for on-going review to facilitate an early response to any environmental issues that may arise.
- The Environmental Report should specify the monitoring frequency and responsibilities and include provisions for reporting on the monitoring. To avoid duplication in data collection, the same indicators should be used for the plan-related and SEA-related monitoring where possible.

**Data & Knowledge Gaps**

- The Plan should identify any significant data and knowledge gaps, include commitments to help address these on a priority basis during the implementation phase of the Plan.

**Alignment with other key plans and programmes**

- We recommend including schematics in the Plan and SEA Environmental Report, showing the links and key inter-relationships with other key relevant national, regional, sectoral and environmental plans.
- The relevant objectives and policy commitments of the NPF, RSES should be aligned with and considered, as appropriate. In particular, the Plan should take account of the National Strategic objective in the NPF on Sustainable Mobility where investment will be made to progressively put in place sustainable alternatives to those currently available. Furthermore, the Plan should show clear connectivity between the objectives and goals of other national, regional and local transport strategies, e.g. metropolitan area transport strategies.
- List of plans / programmes included in scoping report should be reviewed to ensure that it does not include legislation that has been revoked or previous versions of plans, e.g. All Ireland Pollinator Plan, River Basin Management Plan.
- In addition to the plans and programmes listed, it may also be useful to consider the following in the SEA:
  - Fáilte Ireland Visitor Experience Development Plans;
  - Metropolitan Area Transport Plans;
  - Regional Tourism Plans (currently being developed by Fáilte Ireland);
  - Healthy Cities Project;
  - Clean Air Strategy – currently released for consultation
  - Proposed Solid Fuel Regs.
  - Dublin Action Plan for Nitrogen Dioxide (December 2021).
  - WHO Global Air Quality Guidelines 2021.
  - Urban Transport Related Air Pollution (UTRAP) Working Group.

**Research**

Environmental Authority	Summary of Submission	Response / Comment
	<ul style="list-style-type: none"> <li>• Department of Transport - Demand Management Study, 2021.               <ul style="list-style-type: none"> <li>– This study helps to better understand what drives transport demand and how a greater shift to more sustainable and healthier forms of travel can be encouraged in Ireland's five largest urban centres.</li> </ul> </li> <li>• NEAR Health Research Project.               <ul style="list-style-type: none"> <li>– The toolkit highlights (1) how people value and experience nature, health and wellbeing, (2) the barriers and bridges to nature connection, (3) what people want from their healthy future environment and (4) how nature-based activities can benefit people's health and wellbeing and enable them to develop a deeper connection with their wider community and with nature. Connecting with nature helps people to care more for the environment and promotes positive wellbeing.</li> </ul> </li> <li>• Green and Blue Spaces and Health: A Health-led approach.               <ul style="list-style-type: none"> <li>– This research was based on a 12-month desk study that modelled, for identified sample sites, the relationships between health indicators and the availability of green and blue infrastructure (GBI).</li> </ul> </li> <li>• Eco-Health: Ecosystem Benefits of Greenspace for Health.               <ul style="list-style-type: none"> <li>– The Eco-Health project seeks to inform public health and spatial planning policy and the important interlinkages between environmental quality and health and well-being.</li> </ul> </li> </ul>	
	<p><b>Commitment</b></p>	
	<p><b>Biodiversity</b></p>	
	<ul style="list-style-type: none"> <li>• The Plan should integrate available habitat mapping and take account of important green infrastructure/ecological corridors in the Plan area. A commitment should be included to protect designated national and European sites in implementing the Plan. Aspects such as recognising the need to control and manage the potential spread of invasive species should also be considered. Additionally, the National Biodiversity Action Plan and All-Island Pollinator Plan should be integrated into the Plan.</li> </ul>	
	<p><b>Scope of the SEA</b></p>	
	<ul style="list-style-type: none"> <li>• The Plan should clearly set out the scope, remit and implementation related elements of the Plan. These will have implications for the SEA, in terms of guiding the level of assessment applicable at the appropriate level for the Plan. Where it is envisaged that measures proposed in the Plan will be implemented via other plans, which themselves have been or will be subject to SEA, this should be explained in the Environmental Report and taken into account in the assessment.</li> </ul>	
	<p><b>Available Guidance &amp; Resources</b></p>	
	<ul style="list-style-type: none"> <li>• SEA process guidance and checklists.</li> <li>• Inventory of spatial datasets relevant to SEA.</li> <li>• Topic specific SEA guidance (including <i>Good practice guidance on Cumulative Effects Assessment</i> (EPA, 2020), <i>Guidance on SEA Statements and Monitoring</i> (EPA, 2020), <i>Integrating climatic factors into SEA</i> (EPA, 2019), <i>Developing and Assessing Alternatives in SEA</i> (EPA, 2015), and <i>Integrated Biodiversity Impact Assessment</i> (EPA, 2012)).</li> <li>• Environmental Sensitivity Mapping (ESM) Webtool. Available at: <a href="http://www.enviromap.ie">www.enviromap.ie</a></li> </ul>	

Environmental Authority	Summary of Submission	Response / Comment
<b>4. Department of Agriculture, Environment and Rural Affairs (DAERA): Northern Ireland Environment Agency (NIEA)</b>	<ul style="list-style-type: none"> <li>• EPA SEA Search and Reporting Tool. Available at: <a href="https://gis.epa.ie/EPAMaps/SEA">https://gis.epa.ie/EPAMaps/SEA</a></li> <li>• EPA WFD Application. Available at: <a href="http://www.Catchments.ie">www.Catchments.ie</a>.</li> <li>• EPA AA Geo Tool. Available at: <a href="https://gis.epa.ie/EPAMaps/AAGeoTool">https://gis.epa.ie/EPAMaps/AAGeoTool</a></li> </ul> <hr/> <ul style="list-style-type: none"> <li>• DAERA would like the SEA Environmental Report to contain a clear statement indicating the opinion about whether or not the implementation of the of the strategy is likely to have a significant effect on Northern Ireland, in combination with any identified measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment.</li> </ul> <p><b>Natural Environment Division (NED) Comments</b></p> <ul style="list-style-type: none"> <li>• NIEA NED works to ensure that Northern Ireland’s special natural environment, including its flora and fauna and landscapes, is conserved, enhanced and managed for the benefit of this and future generations, thereby contributing to sustainable development.</li> <li>• We note that it is proposed to integrate the network with NI as appropriate and that some of the broadly identified corridors will reach the border with NI and may have potential to have an effect on NI. Transboundary issues don’t appear to have been highlighted specifically within the scoping report.</li> <li>• We advise that transboundary issues are taken into account in the Environmental report.</li> <li>• We would highlight consideration of the following issues including the potential disturbance to/impact on NI / ROI migratory/mobile species such as salmon, for example Lough Melvin Special Area of Conservation which lies within both NI and the ROI. Cross border designated sites, European sites in NI adjacent to or with pathways to/from the ROI, priority habitats, river basins, and other landscape types also require special attention as ecological functionality and ‘views’ of landscape cross political boundaries.</li> <li>• The SEA should consider all potential impacts including those which may impact NI both directly and indirectly.</li> <li>• NI baseline conditions and relevant plans and programmes will need to be considered as part of the Environmental Report.</li> <li>• Other than the issues highlighted above NED are content with the overall approach to SEA and the issues that will be addressed including the consideration of how Environmental impacts will be addressed and mitigated, this should include potential impacts on NI.</li> <li>• NED are in agreement and welcome the completion of a Habitats Regulations Assessment (AA) in parallel to the SEA.</li> <li>• We welcome that mitigation and monitoring will be put in place in due course and look forward to the opportunity to comment further as the process develops.</li> </ul> <p><b>Data Worth Considering</b></p> <ul style="list-style-type: none"> <li>• The Wildlife (NI) Order 1985 (as amended).</li> <li>• Wildlife and Natural Environment Act (NI) 2011.</li> <li>• The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended).</li> <li>• The Environment (NI) Order 2002.</li> </ul>	<p>Additional information relating to Northern Ireland’s environment has been included, including baseline information. Transboundary effects have been assessed and presented in the Environmental Report. Data sources have been considered through updates to the baseline information relating to Northern Ireland. Comments related to AA have been noted and fed back to AA team.</p>



Environmental Authority	Summary of Submission	Response / Comment
	<ul style="list-style-type: none"> <li>• The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017.</li> <li>• The Strategic Planning Policy Statement (SPPS) for Northern Ireland.</li> <li>• Planning Policy Statements (PPS – in particular PPS2 and PPS18). It should be noted that the PPS's will be superseded by Local Development Plans when they are adopted.</li> <li>• Biodiversity Strategy for NI to 2020 <a href="https://www.daera-ni.gov.uk/publications/biodiversity-strategy-northern-ireland-2020-0">https://www.daera-ni.gov.uk/publications/biodiversity-strategy-northern-ireland-2020-0</a></li> <li>• Draft Environment Strategy <a href="https://www.daera-ni.gov.uk/consultations/esni-public-discussion-document">https://www.daera-ni.gov.uk/consultations/esni-public-discussion-document</a></li> <li>• The Draft NI peatland policy: <a href="https://www.daera-ni.gov.uk/consultations/ni-peatland-strategy-consultation">https://www.daera-ni.gov.uk/consultations/ni-peatland-strategy-consultation</a></li> <li>• The Draft Green Growth Strategy.</li> <li>• Northern Ireland Energy Strategy 2050.</li> </ul> <p><b>Other useful information sources</b></p> <ul style="list-style-type: none"> <li>• NI State of the Environment Reports: <a href="https://www.daera-ni.gov.uk/publications/state-environment-report-2013">https://www.daera-ni.gov.uk/publications/state-environment-report-2013</a></li> <li>• NI Environmental Statistics Reports: <a href="https://www.daera-ni.gov.uk/articles/northern-ireland-environmental-statistics-report">https://www.daera-ni.gov.uk/articles/northern-ireland-environmental-statistics-report</a></li> </ul> <p><b>Other Relevant Web-Links</b></p> <ul style="list-style-type: none"> <li>• Designated Scientific Sites: <a href="http://www.daera-ni.gov.uk/landing-pages/protected-areas">www.daera-ni.gov.uk/landing-pages/protected-areas</a></li> <li>• Regional Landscape Character Map viewer: <a href="https://www.daera-ni.gov.uk/services/regional-landscape-character-areas-map-viewer">https://www.daera-ni.gov.uk/services/regional-landscape-character-areas-map-viewer</a></li> <li>• DAERA - map browser for NI protected sites and known priority habitat: <a href="http://www.daera-ni.gov.uk/services/natural-environment-map-viewer">www.daera-ni.gov.uk/services/natural-environment-map-viewer</a></li> </ul> <p><b>Natural Environment Datasets</b></p> <ul style="list-style-type: none"> <li>• <a href="http://www.daera-ni.gov.uk/articles/download-digital-datasets">www.daera-ni.gov.uk/articles/download-digital-datasets</a></li> <li>• AA should refer to the status of habitats and species in the relevant reports available on the JNCC website as follows: UK Article 17 report for the Habitats Directive <a href="https://jncc.gov.uk/our-work/article-17-habitats-directive-report-2019/">https://jncc.gov.uk/our-work/article-17-habitats-directive-report-2019/</a> and the UK Article 12 report for the Birds Directive <a href="https://jncc.gov.uk/our-work/european-reporting/#birds-directive-reporting">https://jncc.gov.uk/our-work/european-reporting/#birds-directive-reporting</a></li> <li>• Please note following the decision of the United Kingdom to leave the European Union, the collective term of “Natura 2000” sites the network of European protected sites are known as “National Site Network” sites within NI.</li> </ul> <p><b>Climate Change Unit comments</b></p> <ul style="list-style-type: none"> <li>• Climate Change Mitigation Branch refers the Transport Infrastructure Ireland to the requirements laid out within the UK Climate Change Committee’s (CCC) Sixth Carbon Budget publication. Link: <a href="https://www.theccc.org.uk/publication/sixth-carbon-budget/">https://www.theccc.org.uk/publication/sixth-carbon-budget/</a></li> </ul>	

Environmental Authority	Summary of Submission	Response / Comment
	<ul style="list-style-type: none"> <li>The CCC recently published its UK Climate Risk Independent Assessment 2021 which identifies the risk and opportunities posed by CC over the next five years. A summary for NI: <a href="https://www.ukclimaterisk.org/independent-assessment-ccra3/national-summaries/">https://www.ukclimaterisk.org/independent-assessment-ccra3/national-summaries/</a></li> </ul> <p><b>Drinking Water Inspectorate Comments</b></p> <ul style="list-style-type: none"> <li>We are appreciative of the consideration given to Article 7 of the WFD: areas designated for the abstraction of water intended for human consumption. Consultation with the NI primary water undertaker (Northern Ireland Water Ltd (NI Water)) is routinely encouraged as the nationwide basins are utilised by NI Water to provide the public supply of water. Consideration should be given to the location of any infrastructure and protection of Drinking Water Protected Areas.</li> <li>If public drinking sources could be impacted, mitigation actions must be provided to ensure quality / sufficiency of supply.</li> <li>Consultation with NI is also encouraged (early stage), in order to establish capability of the public water system infrastructure if required, e.g., increase in tourism leading to an increased demand for supply.</li> <li>Furthermore, a development must not impact on either the quality or sufficiency of a private water supply, and mitigation measures must be put in place, where required, in the protection of such drinking water supplies. Quality standards for private supplies in Ireland are detailed in European Communities (Drinking Water) Regulations 2014 (S.I. 122 of 2014) which is already included in the scoping document. For works which extend to NI, The Private Water Supplies Regulations (Northern Ireland) 2017 regulate the water quality.</li> <li>Dependent on the scale, type, location and the potential impacts the proposal may have on such supplies the developer should, if appropriate, undertake a scoping exercise to determine the location of any private water supplies. Details on undertaking a search for potential private water supplies in NI available at: <a href="http://drinkingwaterinspectorate.daera-ni.gov.uk">Drinking Water Inspectorate Viewer (daera-ni.gov.uk)</a></li> </ul> <p><b>Water Management Unit Comments</b></p> <ul style="list-style-type: none"> <li>The SEA should consider all transboundary issues, including the potential disturbance to/impact on NI / ROI migratory / mobile species such as salmon, for example within the Lough Melvin Special Area of Conservation which lies within both NI and the ROI. Such species rely and can be impacted upon water quality and water resource issues.</li> <li>Cross border river basins require special attention as ecological functionality cross jurisdictional boundaries. The SEA should consider all potential impacts including those which may impact NI both directly and indirectly.</li> </ul>	
<p><b>5. Department for Communities (DfC): Historic Environment Division (HED)</b></p>	<ul style="list-style-type: none"> <li>HED operate via a Service Level Agreement with colleagues in DAERA in relation to SEA. HED welcomes that cultural heritage has been scoped in for assessment, and that the plan proposals seek to integrate with existing and proposed cycling infrastructure in NI. Consideration and assessment of likely impacts on transboundary heritage assets will therefore be required in relation to this topic in the Environmental Report.</li> <li>A large number of heritage assets predate the border itself and some, which have the potential to be utilized as cycle routes, such as canals, disused railways etc. The transboundary qualities such as the inter-relationships of sites, buildings and places and the potential effects with regard to impacts on their settings and the understanding and the experience of them should also be considered.</li> <li>HED welcomes the intent of the plan to make the historic environment more accessible to the public through sustainable transport means. Given the proposals will involve development of routes within predominantly rural areas,</li> </ul>	<p>Comments on transboundary elements noted.</p> <p>Comments on reuse and rejuvenation of heritage assets noted and opportunities to enhance understanding of the historic environment considered throughout the assessment.</p>

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	<p>opportunities to conserve or reuse heritage assets, e.g., industrial or vernacular buildings/ structures as ancillary facilities for cyclists would serve to meet Cultural Heritage Objectives outlined in 5.10.7. Opportunities to enhance understanding of local heritage along cycle routes e.g., through information points, signage etc.</p> <ul style="list-style-type: none"> <li>Acknowledging the NCN plan will identify, at a strategic-level, key corridors for interventions and set the framework for subsequent plans and projects which have the potential for significant effects on transboundary cultural heritage, the relevant international conventions.</li> </ul> <p><b>International Conventions</b></p> <ul style="list-style-type: none"> <li>Convention for the Protection of the Architectural Heritage of Europe (Granada, 1985).</li> <li>Convention for the Protection of the Archaeological Heritage of Europe (Valletta, 1992).</li> </ul> <p><b>Legislation</b></p> <ul style="list-style-type: none"> <li>Fisheries Act 2020.</li> <li>Planning Act (Northern Ireland) 2011.</li> <li>Historic Monuments and Archaeological Objects (Northern Ireland) Order 1995.</li> <li>Protection of Wrecks Act 1973.</li> </ul> <p><b>Regional Strategies and policies</b></p> <ul style="list-style-type: none"> <li>Regional Development Strategy 2035 (infrastructure-ni.gov.uk) - Spatial strategy for NI.</li> <li>Archaeology 2030 - A Strategic Approach for Northern Ireland (niheritagedelivers.org).</li> <li>Strategic Planning Policy Statement, Paragraphs 6.1-6.30 outlines the strategic planning policy around heritage assets in NI.</li> <li>HED on behalf of DfC maintains and augments the Historic Environment Record of Northern Ireland (HERoNI), which includes records of designated and non-designated heritage assets. This information may aid understanding of the historic landscape context and heritage assets. This should be used to understand where there is a likelihood or potential for impact on cultural heritage, the associated constraints, and potential mitigation measures.</li> <li>Datasets are available at Historic Environment Digital Datasets and can also be viewed through our historic environment map viewer Historic Environment Map Viewer.</li> </ul>	Additional policies and plans included in context review.

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Appendix I

# Natura Impact Statement

# Appropriate Assessment Screening and Natura Impact Statement

In support of the National Cycle Network Plan

Transport Infrastructure Ireland

September 2022

**Prepared for:**

Transport Infrastructure Ireland

**Prepared by:**

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# 1. Introduction

## Background to the National Cycle Network Plan

- 1.1 Transport Infrastructure Ireland (TII) worked with key stakeholders to prepare the National Cycle Network Plan ('NCN Plan'). The NCN Plan focuses on linking cities and towns of over 5,000 people with a safe, connected and inviting cycle network. It includes plans to create cycle routes to destinations such as transport hubs, centres of education, centres of employment, leisure and tourist destinations. It aims to optimise the potential for people to cycle as part of their daily activities, such as work or educational commuting. It also integrates with existing and proposed cycle infrastructure.
- 1.2 The NCN builds on previous work completed by TII and aligns with the work being undertaken by the National Transport Authority (NTA) in developing urban and county level cycle networks. It integrates with other cycle routes and networks in various stages of development, including the EuroVelo routes, greenways and the Strategic Plan for Greenways in Northern Ireland. The NCN plan complements these other cycling development projects and will provide a core spine that other networks and routes can connect to.
- 1.3 The NCN Plan sets out to: *“Develop a safe, connected, and inviting cycle network between urban areas and key destinations to achieve accessible, sustainable, and high-quality routes that will help to reduce the carbon impact of transport and promote a healthy and inclusive society.”*
- 1.4 The NCN will guide the development of cycle infrastructure in Ireland over the coming years. In setting out a proposed national cycle network, the current phase in the development of the NCN Plan focusses on the establishment of broad corridors approximately 4km wide within which interventions should subsequently be targeted. As such, the NCN Plan identifies a series of corridors which it is intended will form the NCN. In identifying these corridors, a range of options were considered as potential corridors. The corridor options have regard to the NCN objectives and feasible connections between two nodes (defined destinations). Specifically, the options were assessed based on estimated demand, safety, integration with existing and planned cycle infrastructure, environment and biodiversity, social inclusion, and connectivity to smaller settlements, transport modes and tourist attractions.
- 1.5 The NCN Plan also defines a high standard of infrastructure provision to provide safe, comfortable and inviting cycle routes for users. The standards are informed by a number of different guidelines and include various infrastructure types (e.g., greenways, segregated cycle tracks, shared road). It does not prescribe a specific infrastructure type for each corridor or section of the NCN, this will be determined at the project level as each section is brought forward.
- 1.6 The NCN will be delivered via a series of rolling, five-year phases. An initial assessment will identify corridors to be delivered in each implementation phase, the first implementation phase will run from 2023-2025 with subsequent phases running every five years – starting in 2026-2030.
- 1.7 To support the consideration of the network, the proposed corridors have been assessed through both the Appropriate Assessment (AA) and Strategic Environmental Assessment (SEA) processes. The purpose of these exercises is to identify, at a high level, any potential impacts that may arise and document, at a general level, appropriate strategic mitigation measures that could be used in future stages (e.g., route selection, planning, design and implementation) to avoid adverse effects on the integrity of European sites if a potential corridor was subsequently taken forward as part of the NCN. The NCN Plan is not necessary for the management of any European sites and is therefore not exempt from AA Screening or Appropriate Assessment.
- 1.8 The NCN Plan has been updated and amended based on input from both the AA and SEA processes and includes a framework to identify and mitigate for any potential significant effects on European sites, as well as an SEA adoption statement. The Natura Impact Statement and its conclusions have informed not only the plan but also the SEA report accompanying the plan, specifically informing the biodiversity assessment of the final SEA report.

## Purpose of this Appropriate Assessment Screening and Appropriate Assessment

- 1.9 This Natura Impact Statement (NIS) has been prepared to provide evidence for the Appropriate Assessment Screening and Appropriate Assessment (AA) of the proposed NCN Plan and to inform the development of the proposed corridors making up the NCN. It will also provide a point of reference for future stages of the NCN (e.g., route selection, planning, design and implementation) which will be carried out by Transport Infrastructure Ireland (TII) and/ or other relevant entities when identified potential corridors are taken forward.
- 1.10 This strategic assessment does not provide consent for any future projects arising from the NCN Plan but demonstrates that the protection for the European site network has been considered and is achievable.
- 1.11 The Natura Impact Statement is structured as follows:
- Chapter 1 – Introduction
  - Chapter 2 – Methodology
  - Chapter 3 – Appropriate Assessment Screening
  - Chapter 4 – Appropriate Assessment
  - Chapter 5 – In Combination Assessment
  - Chapter 6 – Conclusions
  - Appendix A – Background to European Sites
  - Appendix B – National Cycle Network Plan Interim Objectives
  - Appendix C – Detailed Appropriate Assessment of each NCN Corridor
  - Appendix D – European Sites and NCN Corridors

## Legislative Context

- 1.12 Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, which is more commonly known as ‘the Habitats Directive’, requires Member States of the European Union (EU) to take measures to maintain or restore, at favourable conservation status, natural habitats and wild species of fauna and flora of Community interest. The provisions of the Habitats Directive require that Member States designate SACs for habitats listed in Annex I and for species listed in Annex II. Similarly, Directive 2009/147/EC on the conservation of wild birds (more commonly known as ‘the Birds Directive’) provides a framework for the conservation and management of wild birds. It also requires Member States to identify and classify SPAs for rare or vulnerable species listed in Annex I of the Birds Directive, as well as for all regularly occurring migratory species. Collectively, SACs and SPAs are known as ‘European sites’.
- 1.13 Under article 6(3) of the Habitats Directive, any plan or project which is not directly connected with or necessary to the management of a European site but would be likely to have a significant effect on such a site, either individually or in combination with other plans or projects, must be subject to an Appropriate Assessment (AA) of its implications for the SAC / SPA in view of the site’s conservation objectives. The process of determining whether likely significant effects exist is called AA Screening.
- 1.14 In the Republic of Ireland, the requirements of Article 6(3) are transposed into national law through Part XAB of the Planning and Development Act 2000 (as amended) for planning matters, and by the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) in relation to other relevant approvals/consents.
- 1.15 The competent authority responsible for carrying out the AA is the relevant consenting body for a particular plan or project, which in this case is Transport Infrastructure Ireland (TII).

## Quality Assurance

- 1.16 This NIS has been prepared in accordance with the AECOM Integrated Management System (IMS). Our IMS places emphasis on professionalism, technical excellence, quality, as well as covering health, safety, environment and sustainability management. All AECOM staff members are committed to maintaining our accreditation to those parts of BS EN ISO 9001:2015 and 14001:2015, as well as BS OHSAS 18001:2007 that are relevant to a consultancy service.
- 1.17 All ecologists and other specialists involved in the production of the NIS for the Proposed National Cycle Network Plan are members, at the appropriate level, of the Chartered Institute of Ecology and Environmental Management (CIEEM) and adhere to their strict Code of Professional Conduct. Further details are provided in Table 1.

**Table 1. Staff member details and experience**

Staff member	Qualifications	Experience
Amelia Kent Senior Ecologist	BSc (Hon); ACIEEM	Amelia has 8 years' experience in ecological consultancy. For the last 4 years her work has focused on undertaking complex AAs of development documents in the UK. She has been involved in a wide range of projects, ranging from individual planning applications, Local Plans (in England) and strategic planning documents (e.g., Strategic Transport Projects Review 2 for Transport Scotland). Amelia has gained expertise in many emerging and important impact pathways, including nutrient neutrality, and disturbance impacts on birds along the coast.
Dr James Riley, Technical Director	PhD; CEnv; MCIEEM	James has seventeen years' experience in ecological consultancy following his doctorate in habitat restoration and has led AECOM's Appropriate Assessment business since 2010. He has worked on Appropriate Assessments throughout the UK, at both a local and national level and including both major developments and infrastructure projects and land use plans, including the Scottish National Planning Framework 4, national and regional transport plans and Local Plans for dozens of local planning authorities. He has also worked on numerous Irish Appropriate Assessments and Natura Impact Statements and Reports in an advisory and technical review capacity.

## 2. Methodology

### Sources of Guidance

- 2.1 This Report has been prepared in accordance with the European Commission (EC) guidance document *Assessment of Plans and Projects in Relation to Natura 2000 Sites – Methodological Guidance on Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC* (European Commission, 2021).
- 2.2 In addition, the following sources of guidance were also used when carrying out the appropriate assessment:
- Appropriate Assessment of Plans and Projects in Ireland (DoEHLG, 2010);
  - Managing Natura 2000 Sites: the provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC (European Commission, 2019); and,
  - Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular Letter NPWS 1/10 & PSSP 2/10 (NPWS, 2010).

### Relevant Case Law

- 2.3 A series of rulings of the Court of Justice of the European Union (CJEU) are relevant and are considered throughout this document. These rulings and their implications for this Appropriate Assessment are summarised in Table 2.

**Table 2. Case law relevant to the Appropriate Assessment of the Proposed National Cycle Network Plan**

Case	Ruling	Relevance to the AA of the Proposed National Cycle Network Plan
People Over Wind and Sweetman v Coillte Teoranta (C-323/17) (CJEU, 2018)	The ruling of the CJEU in this case requires that any conclusion of ‘no likely significant effect’ on a European site must be made prior to any consideration of measures to avoid or reduce harm to the European site. The determination of LSE should not, in the opinion of the CJEU, constitute an attempt at detailed technical analyses. This should be conducted as part of the AA.	It is necessary to distinguish between those measures which are intended to avoid or reduce harmful effects on a European site and those elements of a plan or project that may incidentally provide some degree of mitigation, but which are intrinsic or essential parts of the plan / project itself. If it can be concluded that the Proposed Plan will have no likely significant on a European site, in the absence of mitigation, the need for further detailed AA will be ‘screened out’.
Waddenzee (C-127/02) (CJEU, 2004)	The ruling in this case clarified that AA must be conducted using best scientific knowledge, and that there must be no reasonable scientific doubt in the conclusions drawn.  The Waddenzee ruling also provided clarity on the definition of ‘significant effect’, which would be any effect from a plan or project which is likely to undermine the conservation objectives of any European site.	Adopting the precautionary principle, a ‘likely’ effect in this AA is interpreted as one which is ‘possible’ and cannot be objectively ruled out.  The test of significance of effects has been conducted with reference to the conservation objectives of relevant European sites.
Commission of the European Communities v UK (C-6/04) (CJEU, 2005)	The opinion of Advocate-General Kokott of 9th June 2005 in this case clarified that, while there must be no reasonable scientific doubt in the conclusions of Appropriate Assessment, “ <i>it would... hardly be proper to require a greater level of detail in preceding plans [rather than planning applications] or the abolition of multi-stage planning and approval procedures so that the assessment of implications can be concentrated at one point in the procedure. Rather, adverse effects on areas of conservation must be assessed at every relevant stage of the procedure to the extent possible on the basis of the precision of the plan. This assessment is to be updated with increasing specificity in subsequent stages of the procedure</i> ”.	A balance must be achieved when carrying out AA of high-level plans such as the Proposed Plan. In certain cases, it will be necessary for assessment to be carried out in greater detail at subsequent stages (e.g., during the design and consenting stage(s) of a particular project).
Holohan and Others v An Bord Pleanála (C-461/17) (CJEU, 2018)	The conclusions of the Court in this case were that consideration must be given during AA to:	This relates to the concept of ‘functionally-linked habitat’, also known as ‘supporting habitat’ i.e., areas outside of the boundary of a European site

- effects on qualifying habitats and/or species of a SAC or SPA, even when occurring outside of the boundary of a European site, if these are relevant to the site meeting its conservation objectives; and,
- effects on non-qualifying habitats and/or species on which the qualifying habitats and/or species depend and which could result in adverse effects on the integrity of the European site.

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T.C Briels and Others v Minister van Infrastructuur en Milieu (C-521/12) (CJEU, 2014)

The ruling of the CJEU in this case determined that compensatory measures cannot be used to support a conclusion of no adverse effect on site integrity.

Compensation can only be considered at the relevant stage of AA and not during AA. Compensation must be delivered when appropriate assessment concludes that there will be adverse effects on site integrity.

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## Overview of the Process from Screening to Appropriate Assessment

2.4 The process required by Articles 6(3) and 6(4) of the Habitats Directive is stepwise and must be followed in sequence. The term 'Appropriate Assessment' is regularly used to describe both the overall process and a particular stage of that process. However, for clarity the term Appropriate Assessment (AA) Screening is used for the stage of determining whether likely significant effects will arise. When referring to the specific stage of Appropriate Assessment, it is referred to as the 'stage of Appropriate Assessment'.

### Evidence Gathering

2.5 The first task is to gather all of the information needed to inform the subsequent stages of the AA process. This includes collecting data on relevant European sites, as well their conservation objectives and any identified existing pressures upon them.

2.6 It is a legal requirement that the impacts of any land use plan being assessed are not considered in isolation but in combination with other plans and/or projects that may affect the European site(s) in question. One of the key activities in the evidence gathering stage is therefore to identify plans and/or projects which could act in combination with the NCN Plan to result in adverse effects on a European site.

2.7 The following data sources were used during the NIS of the NCN Plan, including:

- The National Cycle Network Plan (including associated SEA Screening Report and SEA Environmental Report);
- Information on individual European sites provided on the National Parks and Wildlife Service (NPWS) website (<https://www.npws.ie/protected-sites>); and,
- Information on individual European sites in Northern Ireland provided on the Department of Agriculture, Environment and Rural Affairs (DAERA) website (<https://www.daera-ni.gov.uk/landing-pages/protected-areas>).

### Stage 1 – Appropriate Assessment Screening

2.8 Following evidence gathering, the first stage of an AA is a Likely Significant Effects (LSEs) test. This is essentially a risk assessment to decide whether the full stage of 'Appropriate Assessment', documented in a Natura Impact Statement (called a Natura Impact Report when applied to plans) is required. This first stage is commonly referred to as 'Appropriate Assessment Screening'.

2.9 The objective is to 'screen out' those plans and projects that can, without any detailed appraisal, be concluded to be unlikely to result in significant adverse effects upon European sites, usually because there is no mechanism for an adverse interaction. This stage is undertaken in Chapter 3 of this report. European sites are provided in Appendix A.

## Stage 2 – Appropriate Assessment

- 2.10 Where it is determined that a conclusion of ‘no LSEs’ cannot be drawn, the analysis must proceed to the stage of Appropriate Assessment. Case law has established that Appropriate Assessment is not a technical term. It refers to whatever level of assessment is appropriate to form a conclusion regarding effects on the integrity (coherence of structure and function) of European sites. As such, it has no pre-ordained methodology. The work involved is essentially identical to that of the Appropriate Assessment Screening stage but involves more detail and the methodology is tailored specifically to the impact pathways and the European sites being assessed.
- 2.11 The purpose of the stage of Appropriate Assessment is to further explore the potential impacts and effects and to determine whether a conclusion of no adverse effects on integrity can be drawn for any of the ‘screened in’ European sites. One of the key considerations during this stage is whether there is available mitigation that would entirely address potential effects.
- 2.12 The stage of Appropriate Assessment must also consider the potential effect(s) on European site integrity from the target plan or project alone and in-combination with other extant or forthcoming plans or projects. The Appropriate Assessment is undertaken in Chapter 4 of the document based on the information available at this early stage of developing the NCN (i.e., 4km wide corridors) to identify, at a high level, any potential effects and document, at a general level, appropriate strategic mitigation measures that could be used in future stages (e.g., route selection, planning, design and implementation).

## Stages 3 and 4 – No Alternatives and Imperative Reasons of Overriding Public Importance (IROPI)

- 2.13 In the circumstances that the impacts of a plan or project on a European site cannot be mitigated, Article 6(4) of the Habitats Directive provides a derogation that enables their approval, provided that three tests are met. These tests must be interpreted strictly, and competent authorities are recommended to undertake early engagement with statutory nature conservation bodies to ensure that the tests are adequately addressed and documented. The following three tests must be met in full:
- No feasible alternative solutions to deliver the objectives of the plan or project exist that would be less damaging;
  - IROPI for the plan or project to proceed exist;
  - Compensatory measures are secured to ensure that the overall coherence of the structure and function of European sites is maintained.
- 2.14 The purpose of testing reasonable alternatives is to ensure that there are no feasible alternative ways to deliver the overall objective of the plan / project that would be less damaging to European sites. Alternative scenarios, including the 'Do Nothing' option, must be considered objectively and broadly. This may include appraising different locations, routes, scales, construction methodologies and timings. Alternative solutions are limited to those which deliver the same overall outcome as the original proposal. It is the responsibility of the competent authority to undertake alternatives testing and refuse planning / adoption consent where less damaging alternatives are identified.
- 2.15 Provided that No Alternatives exist, the competent authority must demonstrate IROPI that justify the plan or project to proceed despite the environmental damages it will cause. Where a European site encompasses priority habitats or species, acceptable IROPI are limited to human health, public safety and beneficial environmental consequences of primary importance. For other European sites IROPI may additionally include those relating to social or economic benefits. Generally, IROPI must meet the key elements of 'imperative', 'overriding' and 'public interest'. While plans or projects may be granted IROPI at all spatial scales, the ones most likely to fulfil the criteria will be those that are in line with national strategic plans or policies (e.g. National Policy Statements and the National Infrastructure Plan).
- 2.16 If the No Alternatives and IROPI tests are met, a plan or project must provide for adequate compensation (in agreement with statutory nature conservation bodies) to ensure the coherent ecological network of protected sites is safeguarded. In most cases compensatory measures would involve the re-creation of comparable habitat, either as an extension to an existing European site or with the potential to be designated in the future. A range of factors should be considered in identifying compensation, including distance to the affected site, time to full ecological functioning, technical feasibility and the time lag associated with the compensation delivery (i.e. compensation measures should be delivered before the adverse effect occurs).
- 2.17 Note that, although Stages 3 and 4 are included within this method section, TII confirms that no project contained within, or which falls results from, the NCN Plan will be progressed if an adverse effect on the integrity of any European site would arise.

## In Combination Scope of the Assessment

- 2.18 It is a requirement of the Habitats Regulations that the impact of any land use plan being assessed is not considered in isolation but in-combination with other plans and projects that may also affect the European site(s) in question.
- 2.19 For example, in the context of the NCN Plan, a reasonable question might be whether the Local Area Plans of local authorities that fall within the spatial coverage of the NCN Plan, might have an in combination effect with the NCN Plan. This synergistic effect may potentially lead to higher recreational pressure in European sites.
- 2.20 When undertaking this part of the assessment it is essential to bear in mind the principal intention behind the legislation i.e., to ensure that those projects or plans (which in themselves may have minor impacts) are



not simply dismissed on that basis but are evaluated for any cumulative contribution they may make to an overall significant effect. In practice, in combination assessment is therefore of greatest relevance when the plan would otherwise be screened out because its individual contribution is inconsequential.

2.21 The NCN Plan will occur alongside the following other land use plans:

- County Carlow Development Plan 2015 – 2021 (Carlow County Council, 2015) – 2,274 net new dwellings
- Draft County Carlow Development Plan 2022 – 2028 (Carlow County Council, 2022) – No current housing targets. Issues Stage.
- Draft Cavan County Development Plan 2022 – 2028 (Cavan County Council, 2021) – 3,996 net new dwelling
- Draft Clare County Development Plan 2023 – 2029 (Clare County Council, 2021) – 4,500 net new dwellings
- Cork County Development Plan 2022 – 2028 (Cork County Council, 2022) – 22,611 net new dwellings
- Donegal County Development Plan 2018 – 2024 (Donegal County Council, 2018) – 5,174 net new dwellings
- South Dublin County Development Plan 2022 – 2028 (South Dublin County Council, 2022) – 17,817 net new dwellings
- Dún Laoghaire–Rathdown County Development Plan 2022 – 2028 (Dún Laoghaire–Rathdown County Council, 2022) – 15,225 net new dwellings
- Draft Fingal County Development Plan 2023 – 2029 (Fingal County Council, 2022) – 16,245 net new dwellings
- Draft Dublin City Development Plan 2022 – 2028 (Dublin City Council, 2022) – 40,000 net new dwellings
- Draft Galway County Development Plan 2022 – 2028 (Galway County Council, 2022) – 11,511 net new dwellings
- Draft Kerry County Development Plan 2022 – 2028 (Kerry County Council, 2022) – 7,000 net new dwellings
- Draft Kildare County Development Plan 2023 – 2029 (Kildare County Council, 2022) – 9,144 net new dwellings
- Kilkenny City and County Development Plan 2021 – 2027 (Kilkenny County Council, 2021) – 4,307 net new dwellings
- Laois County Development Plan 2021 – 2027 (Laois County Council, 2022) – 3,998 net new dwellings
- Draft Leitrim County Development Plan 2023 – 2029 (Leitrim County Council, 2022) – 1,677 net new dwellings
- Draft Limerick County Development Plan 2022 -2028 (Limerick City and County Council, 2022) – 15,591 net new dwellings
- Longford County Development Plan 2021 – 2027 (Longford County Council, 2021) – 2,586 net new dwellings
- Louth County Development Plan 2021 – 2027 (Louth County Council, 2021) – 2,260 net new dwellings
- Draft Mayo County Development Plan 2021 – 2027 (Mayo County Council, 2022) – 3,237 net new dwellings

- Meath County Development Plan 2021 – 2027 (Meath County Council, 2021) – 20,671 net new dwellings
- Monaghan County Development Plan 2019 – 2025 (Meath County Council, 2019) – 1,977 net new dwellings
- Offaly County Development Plan 2021 – 2027 (Offaly County Council, 2021) – 3,978 net new dwellings
- Roscommon County Development Plan 2022 – 2028 (Roscommon County Council, 2022) – 2,353 net new dwellings
- Sligo County Development Plan 2017 – 2023 (Sligo County Council, 2017) – 3,705 net new dwellings
- Draft Tipperary County Development Plan 2022 – 2028 (Tipperary County Council, 2022) – 5,917 net new dwellings
- Draft Waterford City and County Development Plan 2022 – 2028 (Waterford City and County Council, 2022)
- Westmeath County Development Plan 2021 – 2027 (Westmeath County Council, 2021) – 4,983 net new dwellings
- Wexford County Development Plan 2021 – 2027 (Wexford County Council, 2021) – 6,488 net new dwellings
- Wicklow County Development Plan 2021 – 2027 (Wicklow County Council, 2021) – 8,936 net new dwellings
- Programme for Government: Our Shared Future
- Project Ireland National Planning Framework 2040
- National Development Plan 2021-2030
- Climate Action Plan 2021 – Securing Our Future
- National Investment Framework for Transport in Ireland (NIFTI) (2021)
- Outdoor Recreational Plan for Public Lands and Waters in Ireland 2017-2021
- Greater Dublin Area Draft Cycle Network Plan (2021)

2.22 As the NCN Plan is focused on providing a national level strategy (as per the National Development Plan) to develop an inter-urban cycle infrastructure, no specific projects have yet been identified for assessment 'in combination'. The AA of the NCN Plan will similarly provide guidance for future specific projects as they are progressed and are subject to the relevant environmental processes.

## 3. Appropriate Assessment Screening

### Potential Impacts from the National Cycle Network

- 3.1 Development of a particular type could give rise to various categories of impact. The broad categories of impact are set out in Table 3. Some of these impact pathways may only arise during a particular phase of NCN roll out. For example, airborne pollution impacts are only likely to occur during construction and may not arise even then depending on what is involved in creating a given stretch of the NCN.

**Table 3. Potential categories of impact**

<b>IMPACT CATEGORY</b>	<b>BRIEF DESCRIPTION</b>
Direct loss of habitat	The direct loss of habitat from within the boundary of a European site. This may include the loss of a habitat type which is itself a qualifying feature of a site, or the loss of habitat that is used by qualifying species for commuting, foraging and/or sheltering.
Loss of functionally-linked habitat	The loss of habitat which is outside of the boundary of a European site, but which is critical to its functioning. For example, the loss of habitat outside of an SPA which is used for foraging, roosting purposes by qualifying bird species which also nest, roost or forage within the SPA.
Waterborne pollution	Including, for example, suspended sediment or run-off of water containing other pollutants such as hydrocarbons or chemicals. Effluent discharges would also be included in this category.
Airborne pollution	This encompasses both dust (i.e., particles of sufficiently large size to coat vegetation and interfere with photosynthesis) and atmospheric pollutants that can be toxic to vegetation or contribute to nitrogen deposition (and thus eutrophication). The latter mainly constitutes oxides of nitrogen (NOx) associated with combustion such as vehicle exhausts, and ammonia (NH <sub>3</sub> ) associated particularly with industrial processes and agriculture but also with vehicle exhausts.
Hydrological changes	Impacts which alter the hydrological conditions either within a European site or in an area used by the special conservation interests or qualifying interests of a European site. For example, reduced flows in a watercourse due to impoundment, or changes to groundwater flows or volumes due to abstraction. These changes can have multiple effects on habitats and species.
Disturbance of qualifying species	This could be physical disturbance, for example due to the movement of vehicles in proximity to qualifying species, or due to noise and/or vibration. The latter may occur at greater distances. Disturbance could arise either during the construction or operational phase of a development. Recreational disturbance caused by increased human presence is also included in this category.

- 3.2 Each of the impact pathways are described fully within the Chapter 4 (Appropriate Assessment Screening)

### European Sites Relevant to the Plan and Zone of Influence

- 3.3 There are no standard criteria applicable in all circumstances for determining the ultimate physical scope of an Appropriate Assessment Screening Report. Rather, the source-pathway-receptor model should be used to determine whether there is any potential pathway connecting development to European sites. The source-

pathway-receptor approach is a standard tool in environmental assessment (OPR, 2021). In order for an effect to occur, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism means there is no likelihood for an effect to occur. Furthermore, even where an impact is predicted to occur, it may not result in significant effects.

- 3.4 In the case of the proposed NCN corridors, it was determined that it was necessary to consider all European sites wholly or partly within each 4km wide corridor. At this strategic stage the details of each route are not determined – they will be determined at the planning stage which will also involve all required environmental assessments. However, professional experience of linear infrastructure construction and operation leads AECOM to judge that it is very unlikely that impacts from cycle routes would occur further afield than 2km and this is very likely to be a highly precautionary distance. Using overlaps with the 4km corridor as the basis of European site selection effectively means that:
- a. The potential for the final route alignment to run through a European site, thus potentially involving direct landtake or recreational pressure impacts, is accounted for;
  - b. The potential for the final route alignment to lie sufficiently close to a sensitive European site to result in potential visual or noise disturbance (judged in this report to be 200m) is accounted for; and
  - c. Where the European site in question is designated for mobile species such as birds and bats that use land beyond the European site boundary, the potential for the final route alignment to run through functionally-linked land of particular importance in maintaining site integrity is accounted for.
- 3.5 There are 173 European sites overlapping with the eighty-five 4km wide NCN corridors. At this early stage of the NCN development, the identification of European sites overlapping with NCN corridors provides a high-level overview of restrictions or requirements on any future develop within each of the 4km wide corridors and indicates those parts of the NCN with the greatest risk of affecting European sites (depending on subsequent detailed design). This is entirely appropriate when a plan constitutes the highest possible tier in a multi-stage planning process. Due to the 4km width of the proposed corridors there is only one European site (Mouds Bog SAC) which lies close to a corridor (within 200m) but does not overlap with it. It should be noted that while a 2km zone of influence is considered highly precautionary in this case, the use of a 2km distance in this AA should not be taken to categorically rule out any impacts beyond 2km once detailed design and planning is undertaken, but merely that impact zones over 2km are unable to be defined at a strategic level. **All future NCN routes will be assessed on a case-by-case basis at the project level where detailed design and location allows greater specificity over zones of impact.**
- 3.6 The European sites included within the Scope of this NIS are presented in Table 6 in Appendix A and are discussed with regards to the impact pathways within the Appropriate Assessment (Chapter 4). They are discussed in relation to each relevant corridor in Appendix C.
- 3.7 The special conservation interests or qualifying interests listed are taken from the NPWS website for each individual European site. In Ireland, the designation features of SPAs are referred to as Special Conservation Interests (SCI), and these comprise bird species, as well as wetland bird habitats. The designation features of SACs are referred to as Qualifying Interests (QI), and these comprise both species (excluding birds), and habitats.
- 3.8 Reviewing the proposed NCN corridors and the reasons for designation of European sites, and taking into account what might be involved in creating a cycle path the following impact pathways were identified as having potential to create a significant effect upon European sites:
- Airborne pollution
  - Disturbance of qualifying interests
    - Noise/light/visual during construction and operation.
    - Recreational pressure
  - Waterborne pollution
  - Direct loss of habitat
  - Loss of functionally-linked habitat

## Appropriate Assessment Screening Conclusion

- 3.9 The previous sections of this report have identified and described the European sites and the potential impact pathways to the National Cycle Network (NCN) Plan. Next the NCN Plan was 'screened' for likely significant effects on European sites. The NCN Plan has a series of objectives presented in Appendix B, which include '*Support connectivity and economic growth of regional urban areas of 5,000+ population as well as priority tourist destinations*'. This involves connecting identified urban areas of 5,000+ population and those urban areas listed in the NTA's urban cycle network strategy, connecting to strategic destinations outside of urban areas (including transport hubs and tourist destinations), as appropriate, integrating with existing and proposed cycling infrastructure (including greenways, safe routes to schools, the EuroVelo network, Interreg projects), as appropriate and integrating with existing and proposed cycling infrastructure in Northern Ireland, as appropriate.
- 3.10 The NCN has a spatial element in it that sets out 4km wide corridors within which interventions should subsequently be targeted. At this strategic stage these corridors are intentionally wide to enable detailed design work to be undertaken to capture the most appropriate route. However, as the corridors are 4km wide and covering the entirety of the Republic of Ireland, there are a substantial number of sensitive sites within them. Given this and the typical works associated with updating existing cycle routes or constructing new, it is impossible to draw a conclusion of 'no likely significant effect' in relation to the NCN Plan. Therefore, it is necessary to proceed to the next stage of Appropriate Assessment.
- 3.11 All potential NCN corridors are screened in for the Appropriate Assessment because likely significant effects cannot be dismissed alone, except for corridors 11 (Westport to Castlebar), 26 (Newcastle West to Tralee/Limerick), 57 (Newbridge to Naas) and 68 (Naas to Dublin). These four corridors could be screened out of AA at the Plan level because there are no European sites within the 4km corridors and taking into account the very limited zone of influence cycleways will have beyond their immediate vicinity. The closest European sites for these four corridors are:
- Corridor 11 (Westport to Castlebar) – A very small part of the western-most part of the corridor at Westport lies within 2km of Clew Bay Complex SAC but constitutes an area of open water that is a very small part of the overall corridor and this SAC is not designated for mobile species that would use the land around the cycle route. The nearest SPA is Lough Conn & Lough Cullin SPA but this is located over 12km from the corridor at its closest point.
  - Corridor 26 (Newcastle West to Tralee/Limerick) – Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA is located 3km from the proposed corridor. However, the corridor lies within an urban area and the SPA is designated for hen harrier; the urban area is unlikely to be a significant foraging area for breeding hen harrier.
  - Corridor 57 (Newbridge to Naas) – Pollardstown Fen SAC is 1km west of the proposed corridor and is designated for sedentary habitats and species. There is no overlap between the corridor and the SAC. The nearest SPA is Poulaphouca Reservoir SPA, located 20km away. This SPA is designated for greylag goose and lesser black backed gull. According to published guidance (see the Appropriate Assessment) core functionally linked habitat for greylag goose is within 2km of its roosts and breeding sites. Lesser black-backed gull may range further but its core habitat is likely to be close to the SPA.
  - Corridor 68 (Naas to Dublin) – Wicklow Mountains SAC is 14km away. It is designated for sedentary habitats and species. There is no overlap between the corridor and the SAC. The nearest SPA is Poulaphouca Reservoir SPA, located 20km away. This SPA is designated for greylag goose and lesser black backed gull. According to published guidance (see the Appropriate Assessment) core functionally linked habitat for greylag goose is within 2km of its roosts and breeding sites. Lesser black-backed gull may range further but its core habitat is likely to be close to the SPA.
- 3.12 In all four cases, the absence of any impact pathway linking to a European site means that there will be no likely significant effect on any European site, either alone or 'in combination' with other plans or projects.

## 4. Natura Impact Statement: Appropriate Assessment

- 4.1 The NCN Plan is a strategic guide for future investment in cycle infrastructure, which proposes 4km wide corridors rather than specific routes or particular activities or interventions for each segment. As such, it is not possible at this stage to be definitive regarding the pathways of impact or zones of influence that will apply to the final routes but they can both be assessed at a high level now and further reviewed at the project level when such details are available. Each of the following impact pathways (see Table 3 for reference) have been identified as having a potential likely significant effect upon one or more European sites in relation to the proposed NCN corridors: airborne pollution, disturbance of qualifying interests, recreational pressure, waterborne pollution, direct loss of habitat, and loss of functionally-linked habitat. The likely Zone of Influence of construction and operation of new and/ or existing public cycle routes have been identified using information from published documents and the peer-reviewed literature applicable to Ireland, where available, and the UK. In other words, consideration has been given to the potential pathway via which impact could act upon the special conservation or qualifying interests of European sites.
- 4.2 This assessment does not provide consent for any future projects arising from the NCN Plan. Each future NCN project will adhere to all required environmental assessments at the design and implementation stages and will also consider the specific measures included in this Appropriate Assessment for each of the NCN corridors. The NCN Plan includes a commitment that no project that has an adverse effect on the integrity of a European site will be progressed.
- 4.3 As a general principle, the NCN Plan has included a criterion that ensures all routes should be located outside the boundary of any European site (SAC or SPA) unless it can be demonstrated through project-level AA Screening (or Appropriate Assessment where necessary) that the ability of that site to achieve its conservation objectives, and that of its qualifying interests to achieve favourable conservation status, would not be impaired. With such a requirement included in the plan it can be concluded that future cycle routes will be designed in a way that avoids direct loss of habitat and would not result in an adverse effect on the integrity of on any European sites.
- 4.4 Based on this approach, and because the corridors as defined are sufficiently flexible that any conflicts with European sites can be designed out, it is possible to conclude no adverse effects on the integrity of European sites from the NCN Plan
- 4.5 It is important to consider the NCN Plan as a whole regarding the identified impact pathways which is done in this section of the report. Here each of the impact pathways are reviewed, as well as potential impacts based on the NCN Plan and possible mitigation measures are included.
- 4.6 A corridor-by-corridor assessment of the proposed NCN is contained within Appendix C. This identifies all European sites overlapping each 4km wide corridor. It also identifies any corridors where the entire 4km width overlaps with a European site which is important for consideration of impact pathways such as direct land take or recreational pressure. The implications for each corridor are discussed, as well as measures to take into account during the design stage to mitigate or avoid any adverse effects on the integrity of European sites.

### Mitigation Principles

- 4.7 In broad terms the following approach should be followed to avoid or identify the need for mitigation at European sites when providing the final design for each NCN route:
- i. Route identification
    1. Identify routes that do not cross a European Site as a first preference. This wasn't always possible because due to the extensive nature of some European Sites in Ireland (particularly riverine SACs) it is impossible to connect some destinations without traversing a European site;
    2. Utilise existing infrastructure and bridge crossings where possible;
    3. Complete an options development process (based on TII standards);

4. Set out a hierarchy of studies, design requirements and potential mitigation solutions in the NCN Plan Appropriate Assessment, to be undertaken and refined for each project.
- ii. Project design
    1. Complete project level appropriate assessment screening (and appropriate assessment where necessary) to ensure no adverse effects on the integrity of European Sites either alone or in combination, taking account of any necessary surveys for mobile qualifying interests (i.e. functionally linked habitat), any necessary recreational impact assessment and any necessary noise or air quality modelling. The need for such investigations for each corridor is identified in this NCN Plan NIS.
  - iii. Project implementation
    1. Where engineering works are required on existing infrastructure, identify and utilise standard well-established mitigation to reduce any potential impact due to engineering or construction works, such as documented noise or dust control techniques<sup>1</sup>;
    2. Aim to avoid new construction within 200m of a European site in order to avoid impacts from construction noise or construction related air quality impacts, or operational lighting or visual disturbance impacts on site integrity. If such construction is required, identify whether any negative effects would actually arise (such as through modelling) and, if so, utilise standard well-established mitigation to reduce any potential impact due to engineering or construction works, such as seasonal restrictions where needed, or physical controls;
    3. Produce a Construction Environment Management Plan (CEMP) to ensure compliance with all relevant legislation, utilise an ecological clerk of works where necessary.
- 4.8 For the seventeen corridors whose entire width overlaps with at least one European site, Appendix C sets out the detailed approach to final route design and mitigation. The overlap is generally due to the need to traverse a riverine European site in order to complete the route. The approach is slightly different depending on the interest features of the European sites involved but in broad terms the approach should be:
- i. Where feasible the crossing should be made using the existing road bridges;
  - ii. Where engineering works to the road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or fish populations;
  - iii. If a new bridge crossing is required, the following general requirements must be followed in designing and assessing the structure:
    1. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat, or supporting habitat for SPA birds;
    2. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;
    3. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above<sup>2</sup>;
    4. A noise impact assessment of bridge construction sensitive receptors will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of relevant species;

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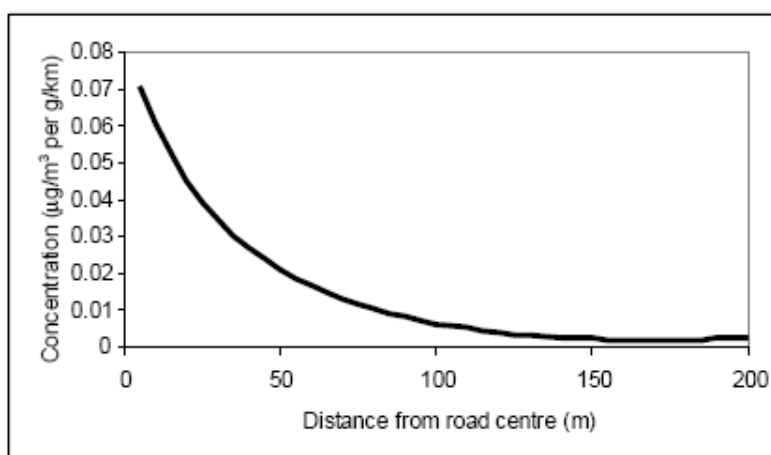
<sup>1</sup> Such as ensuring works are timed to take place outside the sensitive season, or implementing noise mitigation (such as cowling or shielding or use of a temporary noise fence) to reduce noise emissions to non-disturbing levels, or implementing air quality mitigation measures such as those listed in Institute of Air Quality Management Guidance: <http://iaqm.co.uk/text/guidance/construction-dust-2014.pdf>

<sup>2</sup> Broome, S.W., Craft, C.B., Struck, S.D. and M. San Clements. 2005. Effects of Shading from Bridges on Estuarine Wetlands. [pdf] Available at: <https://connect.ncdot.gov/projects/planning/RNAProjDocs/2001-12FinalReport.pdf>. A study undertaken by AECOM for a new bypass in the UK also investigated this issue, considering various different bridge types and dimensions across the country and the effect it had on riverine vegetation. This supported a preferred height:width ratio of 0.7 or above.

5. Water quality protection measures will be required;
  6. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.
- iv. If detailed design work indicates that a new crossing is required but it is not possible to deliver such a crossing without an adverse effect on site integrity, the identified potential alternative solutions should be taken forward, or the corridor otherwise revised so that adverse effects on the integrity of European sites are avoided.

## Airborne Pollution

- 4.9 The principal pollutant of concern to habitats is oxides of nitrogen (NOx) emitted from combustion and particularly vehicle exhausts. According to the World Health Organisation, the critical NOx concentration (critical threshold) for the protection of vegetation is 30  $\mu\text{g}/\text{m}^3$ . More recent evidence indicates that some vehicles (notably petrol cars) also emit ammonia, which makes a disproportionately large contribution to nitrogen deposition where it is emitted. Reflecting its greater toxicity ammonia has a much lower critical load than NOx of 1  $\mu\text{g}/\text{m}^3$  for sites in which lichens and bryophytes are a significant part of the interest, to 3  $\mu\text{g}/\text{m}^3$  for all other vegetation. In addition, ecological studies have determined 'critical loads' of atmospheric nitrogen deposition (that is, NOx combined with ammonia  $\text{NH}_3$ ) for key habitats within the European sites in the study area. The critical load is the rate of deposition beyond which research indicates that adverse effects can reasonably be expected to occur.
- 4.10 Clearly in this case the emission of vehicle exhaust pollutants would only be (potentially) appropriate during construction of the NCN where actual new construction was required. With regard to pollution from road traffic, Institute of Air Quality Management Guidance states that, "Beyond 200 m, the contribution of vehicle emissions from the roadside to local pollution levels is not significant" (Holman, et al., 2020) See Plate 2 below.



**Plate 1. Generalised model of traffic contribution to concentrations of pollutants at different distances from a road**

- 4.11 As the NCN Plan proposes 4km wide corridors, it is not yet possible to determine which European sites would lie within 200m of the final route or where construction works may be required. These will both be determined during the later planning and design stages when further assessment and consideration will be required. At this stage all European sites within the proposed 4km corridor are included within the analysis of this pathway.
- 4.12 All terrestrial European sites shown within Table 6 Appendix A lie within one or more of the proposed NCN corridors and therefore could (pending detailed route planning and design) lie within 200m of at least one NCN cycle route, all of which are sensitive to atmospheric nitrogen deposition to varying degrees. Although there are no details regarding specific measures planned or required for each cycle route, work could include improvements to the standard of existing roads, widening existing roads to include a cycle lane and/ or construction of a new cycleway. There is thus the potential for impacts during the construction stage from construction vehicles within the proposed cycle network sites, or along roads leading up to the sites, as well



- as any generators that may be needed for the works. Operationally cycle networks would not impact European sites with regards to air quality once any construction has been completed.
- 4.13 Depending on the nature of the construction works and the substrates and materials involved there is also some potential for limited localised dust generation that may require inclusion of standard dust dispersion control methods, although this is likely to affect a much smaller zone even than exhaust pollutants. For the purposes of assessment, according to guidance from the Institute of Air Quality Management<sup>3</sup>, with respect to possible effects due to dust, *“an assessment will normally be required where there is...an ‘ecological receptor’ within: 50m of the boundary of the site; or 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s)”*.
- 4.14 As identified in Appendix C, 65 of the 85 proposed NCN corridors overlap with at least one European site. Since the actual potential for any effects depends on the final route alignment within the proposed corridor and details of the individual works and interventions required for each cycle route as it progresses through planning and design stages, no traffic or air quality modelling can be undertaken at this stage to quantify the impact of the construction of potential cycle routes on European sites. However, it also means that within the proposed NCN corridors there is considerable flexibility for individual routes to be selected and designed to minimise any impact to an insignificant level, either through ensuring any construction work involving emissions is located at least 200m (50 m for dust emissions), from the nearest SAC or SPA, and/or by ensuring that standard well-established mitigation (such as that used to control dust generation and dispersal<sup>4</sup>) is utilised to remove emissions or reduce them to an insignificant level.
- 4.15 Even for the seventeen corridors that lie entirely within a European site it may be possible to avoid new construction (such as by using existing bridge crossings of rivers) and even if new construction cannot be avoided, only some areas of the SACs involved are sensitive to atmospheric nitrogen deposition. For example, most of the SACs involved are riverine sites and ‘in river’ features are more typically phosphate-limited rather than nitrogen-limited. In other words, phosphorus is the principal nutrient controlling eutrophication and this does not stem from atmosphere. While most of these riverine habitats also include wetland terrestrial habitats as interest features (such as wet heathland or alluvial woodland) these are not distributed the entire length of the river, and some (such as alluvial woodland) are not identified on the Air Pollution Information System as being vulnerable to atmospheric nitrogen deposition. Moreover, research has indicated that long-term exposure to nitrogen sources (which will not arise from the NCN Plan or any of its cycleways) is more important to short-term exposure from activities such as construction. For example, *‘critical loads relate to the potential effects over periods of decades... critical loads provide the long-term deposition [emphasis added] below which we are sure that adverse ecosystem effects will not occur<sup>5</sup>*.
- 4.16 In Appendix C it is identified for all corridors that overlap with a European site that *‘The final route alignment should aim to avoid any new construction within 200m of any European sites and if any new construction within 200m is needed to create the cycle route an air quality assessment (and potentially air quality mitigation) will be required to ensure there is no air pollution impacts on sensitive habitats’*. A paragraph is included within the NCN Plan to reflect the above quoted text from Appendix C. It states that initiatives brought forward under each of the proposed routes will need scrutiny to determine whether potential for significant effects on European sites exist, and if so should undertake a project level Appropriate Assessment to determine whether the initiative/route would have a significant effect, or adverse effect on the integrity of European sites either alone or in combination with other plans and projects.
- 4.17 Based on the inclusion of this paragraph within the final NCN Plan, it is considered that a sufficient framework exists to ensure that the proposed routes within the NCN Plan could be designed and delivered in such a way as to avoid an adverse effect on European sites with regards to air pollution.

## Disturbance of Qualifying Interests

- 4.18 With regards to the NCN, noise and visual disturbance would only be considered an issue if they are affecting sites designated for vulnerable animal interest (particularly birds and bats) rather than their habitats and would represent a net change in the current exposure. This potentially applies to any European site

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<sup>3</sup> IAQM. (2016) *Guidance on the assessment of dust from demolition and construction*. The Institute of Air Quality Management. Version 1.1.

<sup>4</sup> Such as those listed in Institute of Air Quality Management Guidance: <http://iaqm.co.uk/text/guidance/construction-dust-2014.pdf>

<sup>5</sup> source: page 220, World Health Organization. 2000. *Air Quality Guidelines for Europe*. WHO Regional Publications, European Series, No. 91. Second Edition

within 200m of a cycle route on the basis that unlikely significant noise or lighting disturbance would arise at greater distances. The rationale for the use of a 200m distance is cited below. All European sites within the proposed 4km corridors are therefore included within the analysis of this pathway on the basis that subsequent to final routing decisions (to be determined during the planning and design stages) they could ultimately lie within 200m of part of an NCN corridor.

## Noise Disturbance during Construction and Operation

- 4.19 The factors that influence a species response to a noise disturbance are numerous, but key factors are species sensitivity, the scale of the impact (e.g., the noise loudness), proximity of disturbance sources and timing/duration of the potentially disturbing activity. Regarding construction noise impacts on waterfowl and waders, AECOM's professional experience is that in broad terms (to be confirmed by noise modelling for individual schemes) noise impacts from conventional construction techniques are unlikely to arise from noise-generating activities located more than c. 200m from the qualifying bird species. Studies indicate that noise levels in excess of 84dB(A) typically elicit a flight response in birds (Cutts & Allan, 1999) while those below 55dB elicit no response. The same research recommends that construction noise levels should generally be kept below 70dB at the boundary of the European sites/functionally linked land to avoid excessive disturbance of birds (Cutts, et al., 2009).
- 4.20 The noisiest construction activity is generally impact piling, where a hammer is dropped on the pile. This has a typical maximum noise level of 100-110dB at 1m from source. Noise attenuates by 6dB for every doubling of distance, such that impact piling typically results in noise levels below 70dB at distances of more than 100m from source. Therefore, a 200m separation between construction activity and a European site should generally ensure no disturbance arises through this pathway. This does not obviate the need for project-level Appropriate Assessment for individual applications (not least because the difference between the baseline and future noise levels may also be relevant) but aids in determining whether the proposed corridors pose a risk of conflict with SPAs through the pathway of construction-related noise. If, during detailed routing decisions, it is not possible or desirable to route an area of cycleway requiring construction work 200m or more away from a sensitive European site, then it will be necessary to undertake noise modelling for any significant construction works and, if the modelling indicates it is required, either implement seasonal avoidance where appropriate (for example, ensuring works are timed to take place outside the sensitive season, such as the September to March period for sites designated for wintering birds) or implement noise mitigation (such as cowling or shielding or use of a temporary noise fence) to reduce noise emissions to non-disturbing levels.
- 4.21 Underwater noise can also be a concern where in river works may be needed (such as for construction of a new cycle bridge over a river) and the site in question is designated for noise-sensitive receptors such as salmon. In Table 6 and Appendix C there are sixteen European sites designated for this species that lie within a 4km corridor of the NCN. At this stage of the NCN development where 4km corridors are included, routing and constructions methods have not yet been determined. However, there are several methods of minimising or avoiding underwater noise disturbance or harm to fish species such as through use of 'silent' piling techniques or seasonal separation between the works and the sensitive qualifying interests.
- 4.22 With regards to operational traffic, as the proposed corridors are cycle networks the noise created by the network is likely to be de minimis.

## Visual Disturbance during Construction and Operation

- 4.23 Some species of birds and other wildlife (such as bats) are also sensitive to lighting or other visual disturbances such as human presence. The concern regarding the effects of visual disturbance on birds stems from the birds expending more energy than is necessary and spending an increased amount of time responding to the disturbance rather than feeding (Riddington, et al., 1996). Disturbance therefore risks increasing energetic output while reducing energetic input, which can adversely affect the 'condition' and ultimately survival of the birds. In addition, displacement of birds from one feeding site to others can increase the pressure on the resources available within the remaining sites, as they have to sustain a greater number of birds (Gill, et al., 1998). Moreover, the more time a breeding bird spends disturbed from its nest, the more its eggs are likely to cool and the more vulnerable they, or any nestlings, are to predators.
- 4.24 The distance at which a species takes flight when approached by a disturbing stimulus is known as the 'tolerance distance' (also called the 'escape flight distance') and differs between species to the same stimulus and within a species to different stimuli. For instance, a DTI study of birds of the northwest coast

of England noted that: “*Divers and scoters were absent from the mouths of some busier estuaries, notably the Mersey... Both species are known to be susceptible to disturbance from boats, and their relative scarcity in these areas... may in part reflect the volume of boat traffic in these areas*” (Department for Trade and Industry, 2006).

- 4.25 Disturbance from visual intrusion such as lighting is likely to be most relevant if the cycle infrastructure is immediately adjacent to an SPA or certain SACs (e.g., those designated for bat species) as cycle networks can result in an increase in path-side lighting. Lighting is only likely to be an issue if the NCN Plan results in the introduction of street lighting to pathways/roads within close proximity of these European sites which are currently unlit.
- 4.26 Many of the European sites that overlap with the proposed corridors are very large and the length of the proposed corridor may be within a small section; this may mean that even if noise or light is generated to a level that could cause an impact, the impact would not affect a significant area of the European site (SAC & SPA), or a significant proportion (>1%) of an SPA population. Moreover, construction works could potentially be timed to avoid sensitive periods (such as night, when many waterfowl and waders forage undisturbed, or, for sites designated for non-breeding birds, the winter season).
- 4.27 Taking into account the potential for noise, lighting and other visual disturbance during construction and operation, Appendix C identifies for all corridors that overlap with a European site that ‘*The final route alignment should avoid any new construction within 200m of any European sites and within 200m of any European sites there should be no new lighting introduced in currently unlit areas unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise assessment (and potentially visual mitigation or seasonal restrictions on works) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds*’.
- 4.28 Even for the seventeen corridors that lie entirely within a European site it may be possible to avoid new construction (such as by using existing bridge crossings of rivers). If new construction cannot be avoided, Appendix C identifies that a noise impact assessment of bridge construction will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of qualifying species. Appendix C also identifies that lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.
- 4.29 Based on the inclusion of this approach to route finalisation and associated pre-consent impact assessment within the final NCN Plan, it is considered that a sufficient framework exists to ensure that future routes within the NCN Plan could be designed and delivered in such a way as to avoid an adverse effect on European sites with regards to disturbance.

## Recreational Pressure

- 4.30 Recreational use of a European site has the potential to:
- Cause disturbance to sensitive species, particularly ground-nesting birds and (where relevant) wintering wildfowl;
  - Cause damage through erosion and fragmentation;
  - Cause eutrophication as a result of dog fouling; and
  - Prevent appropriate management or exacerbate existing management difficulties.
- 4.31 Different types of European sites are subject to different types of recreational pressures and have different vulnerabilities. Studies across a range of species have shown that the effects from recreation can be complex.
- 4.32 Human activity can affect birds either directly (e.g., through causing them to flee) or indirectly (e.g., through damaging their habitat). The most obvious direct effect is that of immediate mortality such as death by shooting, but human activity can also lead to behavioural changes (e.g., alterations in feeding behaviour, avoidance of certain areas) and physiological changes (e.g., an increase in heart rate) that, although less noticeable, may ultimately result in major population-level effects by altering the balance between immigration/birth and emigration/death (Riley, 2003). The impact of disturbance on birds changes during

the seasons in relation to a number of very specific factors, for example the winter below freezing temperature, the birds fat resource levels and the need to remain watchful for predators rather than feeding. These considerations lead to birds apparently showing different behavioural responses at different times of the year.

- 4.33 The factors that influence a species response to human presence are numerous, but the three key factors are species sensitivity, proximity of disturbance sources and timing/duration of the potentially disturbing activity. The distance at which a species takes flight when approached by a disturbing stimulus is known as the 'tolerance distance' (also called the 'escape flight distance') and differs between species to the same stimulus and within a species to different stimuli.
- 4.34 The potential for apparent disturbance may be less in winter than in summer, in that there are often a smaller number of recreational users. In addition, the consequences of disturbance at a population level may be reduced because birds are not breeding. However, activity outside of the summer months can still cause important disturbance, especially as birds are particularly vulnerable at this time of year due to food shortages. Disturbance which results in abandonment of suitable feeding areas can have severe consequences for those birds involved and their ability to find alternative feeding areas. Several empirical studies have, through correlative analysis, demonstrated that out-of-season (October-March) recreational activity can result in quantifiable disturbance:
- Tuite et al. (Tuite, et al., 1983) found that during periods of high recreational activity, bird numbers at Llangorse Lake decreased by 30% as the morning progressed, matching the increase in recreational activity towards midday. During periods of low recreational activity, however, no change in numbers was observed as the morning progressed. In addition, all species were found to spend less time in their 'preferred zones' (the areas of the lake used most in the absence of recreational activity) as recreational intensity increased;
  - Underhill et al. (Underhill et al., 1993) counted waterfowl and all disturbance events on 54 water bodies within the South West London Water Bodies Special Protection Area and clearly correlated disturbance with a decrease in bird numbers at weekends in smaller sites and with the movement of birds within larger sites from disturbed to less disturbed areas.
- 4.35 Most types of aquatic or terrestrial European site can be affected by trampling, which in turn causes soil compaction and erosion:
- (Wilson & Seney, 1994) examined the degree of track erosion caused by hikers, motorcycles, horses and cyclists from 108 plots along tracks in the Gallatin National Forest, Montana. Although the results proved difficult to interpret, it was concluded that horses and hikers disturbed more sediment on wet tracks, and therefore caused more erosion, than motorcycles and bicycles.
  - (Cole, 1995) conducted experimental off-track trampling in 18 closed forest, dwarf scrub and meadow & grassland communities (each tramped between 0-500 times) over five mountain regions in the US. Vegetation cover was assessed two weeks and one year after trampling, and an inverse relationship with trampling intensity was discovered, although this relationship was weaker after one year than two weeks indicating some recovery of the vegetation. Differences in plant morphological characteristics were found to explain more variation in response between different vegetation types than soil and topographic factors. Low-growing, mat-forming grasses regained their cover best after two weeks and were considered most resistant to trampling, while tall forbs (non-woody vascular plants other than grasses, sedges, rushes and ferns) were considered least resistant. Cover of hemicryptophytes and geophytes (plants with buds below the soil surface) was heavily reduced after two weeks but had recovered well after one year and as such these were considered most resilient to trampling. Chamaephytes (plants with buds above the soil surface) were least resilient to trampling. It was concluded that these would be the least tolerant of a regular cycle of disturbance.
  - (Cole, 1995) conducted a follow-up study (in 4 vegetation types) in which shoe type (trainers or walking boots) and trampler weight were varied. Although immediate damage was greater with walking boots, there was no significant difference after one year. Heavier trampers caused a greater reduction in vegetation height than lighter trampers, but there was no difference in effect on cover.
  - (Cole & Spildie, 1998) experimentally compared the effects of off-track trampling by hiker and horse (at two intensities – 25 and 150 passes) in two woodland vegetation types (one with an erect forb

understorey and one with a low shrub understorey). Horse traffic was found to cause the largest reduction in vegetation cover. The forb-dominated vegetation suffered greatest disturbance but recovered rapidly. Higher trampling intensities caused more disturbance.

- 4.36 The most recent National Parks and Wildlife Report on European protected habitats and species in Ireland<sup>6</sup> identified recreational infrastructure and leisure activities as a substantial threat and pressure to a large number of European sites. The report identifies the following habitats as having inadequate or bad overall status due to recreation, among other activities: drift lines, vegetated shingle, marram dunes (white dunes), embryonic shifting dunes, decalcified *Empetrum* dunes, fixed dunes (grey dunes), decalcified dune heath and calaminarium grassland. 'Development, construction and use of residential, commercial, industrial and recreational infrastructure and areas' is identified as a pressure in 41% of habitats. The report identifies that the main pressures on habitats are ecologically unsuitable grazing levels – which can be undergrazing (or even abandonment) as well as overgrazing; pollution of freshwaters and coastal marine waters; drainage and/or cutting of peatlands; invasive species; and recreational pressures.
- 4.37 Forty-nine European sites listed in Table 6 overlap with at least one proposed 4km wide NCN corridor and are designated for at least one of the habitats listed above. Those corridors where the entire 4km width traverses a European site and where it has the potential to introduce new access into an SAC or SPA pose the greatest potential for recreational impacts and are the subject of detailed discussion below.
- 4.38 Using existing infrastructure through European sites (e.g. existing routes or greenways) for sections of the NCN may not materially alter the exposure of those European sites to disturbance above the existing baseline level. Even new infrastructure may not increase recreational disturbance risk if, for example, public access to the site is already well managed, the features are not particularly disturbance sensitive, and/or the new infrastructure is located such that it would not materially increase exposure of the qualifying interests of the site to disturbance. However, improving and creating new cycle routes past European sites could create easier access to the site and its sensitive features, and therefore cause greater pressure, with regards to both trampling by foot, erosion by bike and disturbance to sensitive species, on European sites in close proximity to the proposed cycle routes.
- 4.39 Appendix C identifies the 4km wide NCN corridors that overlap with a European site and the European sites involved. In the vast majority of cases the nature of the 4km wide corridor is such that the final design of the cycle way could enable sensitive European sites to be avoided if required; site sensitivity would need to be considered during detailed design. As a general principle any new construction for a cycleway should remain at least 200m from European sites and this will generally work to restrict any potential increase in recreational access. If existing infrastructure through a European site (such as an existing road) is to be used to carry the cycle way then there should be an assessment of the implications for recreational pressure of providing the cycle way. If the implications are deemed unacceptable then the corridor is sufficiently wide the cycleway can be rerouted for that section. In developing the NCN three corridors were identified which entirely overlapped with European sites meaning that the final cycle route would have to traverse the European site(s) in some form:
- In the initial version of Corridor 2 (Derry to Letterkenny) - North of Colehill the entire corridor overlapped with the Lough Swilly SPA for a distance of c. 600m.
  - In the initial version of Corridor 15 (Athlone to Longford) - Lough Ree SAC/SPA occupied the entire 4km corridor between Clooncah and Gallagher, a distance of c. 5km.
  - In the initial version of Corridor 18 (Athlone to Tullamore) - At Templedeew and again at Clonony Beg the entire 4km corridor crossed the River Shannon Callows SAC and Middle Shannon Callows SPA.
- 4.40 For these three corridors it was identified that relatively limited amendments to the corridors would mean that the corridor would avoid entirely occupying European sites thus allowing for the possibility for the final cycle way to be located entirely outside European sites if required to avoid adverse effects on integrity. The version of all three corridors in the final NCN Plan thus incorporates this change.
- 4.41 Notwithstanding these amendments, there remain seventeen instances of the entire width of the 4km wide corridor overlapping with a European site meaning that in these locations it would not be possible to determine a final routing within the corridor that entirely avoided the European site. In all instances this is due to the need for bridge crossings of rivers, either using existing infrastructure or new infrastructure, and

<sup>6</sup> The Status of EU Protected Habitats and Species in Ireland, 2019. <https://www.npws.ie/publications/article-17-reports>

avoidance of the European site would entail significant rerouting of the corridor; in some cases even rerouting would be difficult because some of the destination settlements cannot be reached from the origin settlement without traversing an SAC or SPA:

- Corridor 4 (Letterkenny to Strabane) - there is a single location, between Lifford and Strabane, where the entire 4km corridor crosses the River Finn SAC for c. 100m.
- Corridor 5 (Letterkenny to Sligo) - At Sligo, the corridor traverses either the Cummeen Strand SPA and Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, or Lough Gill SAC depending on where the crossing point is located. The corridor (excluding the western half which is over open sea) also crosses Lough Melvin SAC at Magheracar.
- Corridor 6 (Sligo to Enniskillin), Corridor 8 (Longford to Sligo) and Corridor 9 (Sligo to Ballina) - At Ballisodare and again at Collooney the entire 4km corridor for all three routes traverses the Unshin River SAC.
- Corridor 10 (Ballina to Castlebar) - West of Foxford the entire 4km corridor traverses the River Moy SAC/ Lough Conn and Lough Cullin SPA.
- Corridor 12 (Galway to Castlebar) and Corridor 13 (Castlebar to Longford) - In the vicinity of Lakeland Lower the entire 4km corridor for both routes traverses the River Moy SAC.
- Corridor 19 (Limerick to Portlaoise) - At Lacka the 4km buffer crosses the River Barrow And River Nore SAC.
- Corridor 20 (Limerick to Athlone) - At Templedeew the entire 4km corridor crosses the River Shannon Callows SAC and Middle Shannon Callows SPA.
- Corridor 21 (Galway to Athlone) - At Ballinasloe the entire 4km corridor traverses the River Suck Callows SPA.
- Corridor 25 (Tralee to Limerick) - At Ballynageragh, Ballyhorgan East and Shanbally the entire 4km corridor traverses the Lower River Shannon SAC.
- Corridor 36 (Cork to Waterford) - Between Muckridge and Tinnabinnna the entire 4km corridor traverses the Blackwater Estuary SPA and Blackwater River (Cork/Waterford) SAC and at Killongford it traverses Dungarvan Harbour SPA.
- Corridor 37 (Cork to Fermoy) - At Ballinterry the entire 4km route corridor traverses the Blackwater River (Cork/Waterford) SAC.
- Corridor 38 (Cork to Limerick) - The entire 4km corridor traverses the Blackwater River (Cork/Waterford) SAC at Mallow.
- Corridor 40 (Limerick to Kilkenny) - Between Newport and Kilcommon the corridor traverses Lower River Shannon SAC, while at Birchhill the entire 4km corridor traverses the Lower River Suir SAC.
- Corridor 49 (Enniscorthy to Wicklow) - At Enniscorthy, Clovass and Clonhenret the entire 4km corridor traverses the Slaney River Valley SAC.

4.42 In all these cases the approach taken to designing the final route will be:

- i. Utilise existing infrastructure and bridge crossings where possible – in all cases there are existing road bridges crossing the relevant watercourses;
- ii. If detailed corridor design indicates that an existing crossing cannot be used and a new crossing is required, the detailed design of the bridge structure will consider the potential to increase access to sensitive European sites. For example, the qualifying interests of many riverine SACs are not particularly sensitive to land-based recreational activity like cycling. While most riverine SACs traversed by the route corridors are also designated for habitats these are wetland habitats whose wet nature may itself discourage recreational access;
- iii. If potential for a recreational pressure effect is confirmed to exist at the location identified for any new infrastructure, any bridge will be designed such that access from the crossing into the European site is difficult.

4.43 In addition to crossings of watercourses, three of the proposed corridors also traverse European sites designated for hen harrier:

- Corridor 40 (Limerick to Kilkenny) - Between Newport and Kilcommon the entire 4km corridor encompasses the Slievefelim to Silvermines Mountains SPA.
  - Corridor 19 (Limerick to Portlaoise) - Between Ballyduff and Carrowreagh the entire 4km corridor lies within Slieve Bloom Mountains SPA for at least 5km; and
  - Corridor 25 (Tralee to Limerick) - Between Doonakenna and Glendarragh much of the 4km corridor lies across Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA.
- 4.44 In all three cases there is an existing road through the SPA so access already exists. If any works to the existing route, or any new route construction, were required, a study would need to be undertaken in detailed route design to confirm that there would be no material change in accessibility to affect nesting hen harrier.
- 4.45 With this approach to design of the final routes it is considered that a framework exists at this NCN Plan level to avoid or adequately mitigate adverse effects on the integrity of European sites through recreational pressure.

## Waterborne Pollution

- 4.46 The quality of the water that feeds European sites is an important determinant of the nature of their habitats and the species they support. Poor water quality can have a range of environmental impacts: At high levels, toxic chemicals and metals can result in immediate death of aquatic life, and can have detrimental effects even at lower levels, including increased vulnerability to disease and changes in wildlife behaviour.
- 4.47 Cycle routes in general operation would not increase pollution risk due to their nature e.g., non-motorised travel. However, any maintenance of these cycle routes once in operation would require further assessment when details on operational maintenance activities are developed. During construction, there is a risk of accidental pollution (such as runoff of sediment, chemicals, hydrocarbons and salt spray from de-icing) of aquatic, marine and riverine European sites during construction or the creation of new hard surfaces increasing surface water runoff, if they occur within close proximity of a sensitive European site.
- 4.48 Depending on the nature and location of the works, impacts could occur at varying distances from the proposed cycle routes. As the NCN Plan includes 4km wide corridors within which a final route could be developed, all European sites within the proposed corridors are included within the analysis of this pathway.
- 4.49 The proposed cycle corridors are likely to involve some construction such as improving the standards of the roads or widening to include a cycle lane which could cause a waterborne pollution event to occur. However, it is an offence to pollute the water environment in Ireland. This is legislated through the Local Government (Water Pollution) Act, 1977 (Office of the Attorney General, 1977) and the 1990 Amendment Act (Office of the Attorney General, 1990) where it states: "*a person shall not cause or permit any polluting matter to enter waters (3(1))*". Waters within this definition includes: "*(a) any (or any part of any) river, stream, lake, canal, reservoir, aquifer, pond, watercourse or other inland waters whether natural or artificial; (b) any tidal waters and, (c) where the context permits, any beach, riverbank, salt marsh or other area which is contiguous to [anything previously mentioned]*".
- 4.50 Therefore, every project must have a duty of care to the water environment and produce and implement plans and procedures to prevent discharge from works entering surface, groundwater, wetlands or coastal waters. This is usually undertaken in the form of a Construction Environment Management Plan (CEMP) which includes measures for the protection of ground and surface waters, pollution prevention measures and emergency response plan for pollution events.
- 4.51 As such it is regarded that the proposed cycle routes can be designed in a way to prevent pollution to the water environment to ensure no adverse effects from water pollution on any European site. The NCN Plan states that each project brought forward through the Plan is required to produce a CEMP to ensure compliance with the Water Pollution Act.

## Direct Loss of Habitat

- 4.52 Direct loss of habitat may occur where existing infrastructure is widened or where new cycle routes are constructed away from previous infrastructure through a European site. Removing land from European sites may affect the structure and function of a European site in several ways including reducing qualifying habitats or habitats upon which qualifying species rely, removal of food sources and nesting/roosting

opportunities or shelter. A reduction in the land available within the European site, depending on the amount of land removed, may affect the structure and function significantly enough to affect the integrity of the site and therefore the qualifying interests of the site may no longer be able to maintain or achieve favourable conservation status.

4.53 For most of the proposed corridors, direct land take can be avoided simply by ensuring the final route avoids entering any European sites; because each corridor is 4km wide this is entirely possible. However, there are seventeen corridors where the entire width of the corridor in at least one location lies within a European site and where direct land take is therefore a possibility. This affects 20 European sites:

- Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA
- Lower River Shannon SAC
- River Shannon Callows SAC
- Middle Shannon Callows SPA
- River Suck Callows SPA
- Slievefelim to Slivermines Mountains SPA
- Lough Corrib SAC
- Lough Conn and Lough Cullin SPA
- Lough Ree SAC
- River Moy SAC
- Lough Gill SAC
- Lough Melvin SAC
- Slieve Bloom Mountains SPA
- River Barrow and River Nore SAC
- Slaney River Valley SAC
- Lower River Suir SAC
- Blackwater Estuary SPA
- Blackwater River (Cork/Waterford) SAC
- Dungarvan Harbour SPA
- Unshin River SAC

4.54 Clearly any direct loss of habitat which itself is a special conservation interest of a European site, or which supports qualifying interests of a European site, would constitute an adverse effect on the integrity of that European site. However, European site boundaries are also sometimes defined to include areas that are essentially 'site fabric' and not fundamental to the ability of the European site to achieve its conservation objectives.

4.55 The appropriate assessment, and approach to be taken in terms of detailed route design and mitigation, regarding the seventeen corridors that lie entirely within a European site boundary for at least a short distance is provided below. With the identified approach to final route design and mitigation/avoidance of adverse effects on the integrity of European sites set out in the table overleaf, it is considered that a framework exists at this NCN Plan level to avoid or adequately mitigate adverse effects on the integrity of European sites through direct land take.



**Table 4. Assessment of each corridor where direct land take could arise**

Route	Assessment	Mitigation or avoidance measure to be included in NCN Plan
<p>Corridor 4 (Letterkenny to Strabane)</p>	<p>There is a single location, between Lifford and Strabane, where the entire 4km corridor crosses the River Finn SAC for c. 100m.</p> <p>The River Finn SAC is designated for oligotrophic waters, wet heaths with <i>Erica tetralix</i>, blanket bogs, transition mires and quaking bogs and its populations of salmon and otter.</p> <p>Unless it stops at Lifford, there is no way the connection to Strabane can be accomplished without crossing the River Finn SAC due to the length of the SAC, other than by making a c. 15km detour north to cross the river downstream of the SAC at Whitehouse.</p>	<p>The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made using the existing road bridge between Lifford and Strabane;</li> <li>2. Where engineering works to the road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or salmon population;</li> <li>3. If a new bridge crossing the River Finn SAC is required, the following general requirements should be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding salmon and otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of either species.</li> <li>e. Water quality protection measures will be required.</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ol> </li> </ol> <p>If detailed design work indicates that a new crossing of the River Finn is required <u>but</u> it is not possible to deliver such a crossing over the SAC without an adverse effect on site integrity, the alternative solution of crossing downstream of the SAC should be taken forward, or the Corridor otherwise revised (such as to cease at Lifford) to demonstrate no adverse effect on site integrity.</p>

Route	Assessment	Mitigation or avoidance measure to be included in NCN Plan
<p>Corridor 5 (Letterkenny to Sligo)</p>	<p>At Sligo, the entire 4km corridor traverses either the Cummeen Strand SPA and Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, or Lough Gill SAC. Cummeen Strand SAC is designated for its estuaries, mudflats and sandflats not covered by seawater at low tide, embryonic shifting dunes, shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes), fixed coastal dunes with herbaceous vegetation (grey dunes), <i>Juniperus communis</i> formations on heaths or calcareous grasslands and calcareous grassland. Lough Gill SAC is designated for its natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation, calcareous grassland, oak woodland, alluvial forest, and populations of white-clawed crayfish, sea lamprey, brook lamprey, river lamprey, salmon and otter. The SPA is designated for its light-bellied brent goose, oystercatcher, redshank and wetland and waterbirds.</p> <p>The entire corridor (excluding the western half which is over open sea) also crosses Lough Melvin SAC at Magheracar. Lough Melvin is designated for its oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoetes-Nanojuncetea, <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils and populations of salmon and otter.</p> <p>There is no way the connection to Sligo can be accomplished without crossing either Cummeen Strand SPA/Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, or Lough Gill SAC, as these form an east west barrier north of Sligo. It would be possible to avoid traversing Lough Melvin but only with a substantial 12km detour to the east and back.</p>	<p>The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made using one of the three existing road bridges north from Sligo and one of the existing bridges crossing Lough Melvin;</li> <li>2. Where engineering works to a road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or white-clawed crayfish, salmon or lamprey populations;</li> <li>3. If a new bridge is required, the following general requirements should be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC/SPA boundaries and/or must involve no loss of qualifying SAC habitat or supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding SPA birds, salmon, lamprey and otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of either species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ol> </li> </ol> <p>If detailed design work indicates that a new crossing of either Cummeen Strand SPA/Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, Lough Gill SAC, or Lough Melvin SAC would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to cease north of Sligo or make the 12km eastwards detour to avoid Lough Melvin to demonstrate no adverse effect on site integrity.</p>

Route	Assessment	Mitigation or avoidance measure to be included in NCN Plan
<p>Corridor 6 (Sligo to Enniskillin)</p> <p>Corridor 8 (Longford to Sligo)</p> <p>Corridor 9 (Sligo to Ballina)</p>	<p>At Ballisodare and again at Collooney the entire 4km corridor for all three routes traverses the Unshin River SAC. The SAC is designated for its water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation, its semi-natural dry grasslands and scrubland facies on calcareous substrates (* important orchid sites), its <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils, its alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> and its populations of salmon and otter.</p> <p>In all three cases it would not be possible to make the connection to Sligo from the south without crossing the Unshin River SAC due to the length of the river.</p>	<p>The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made using existing road bridges;</li> <li>2. Where engineering works to a road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or salmon population;</li> <li>3. If a new bridge crossing the Unshin River SAC is required, the following general requirements should be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding salmon and otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of either species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ol> </li> </ol> <p>If detailed design work indicates that a new crossing of the Unshin River is required <u>but</u> it is not possible to deliver such a crossing over the SAC without an adverse effect on site integrity, the Corridor should be revised (such as to not to connect to Sligo) to demonstrate no adverse effect on site integrity.</p>

Route	Assessment	Mitigation or avoidance measure to be included in NCN Plan
<p>Corridor 10 (Ballina to Castlebar)</p>	<p>West of Foxford the entire 4km corridor traverses the River Moy SAC/ Lough Conn and Lough Cullin SPA. The SAC is designated for its lowland hay meadows, active raised bogs, degraded raised bogs still capable of natural regeneration, depressions on peat substrates of the Rhynchosporion, alkaline fens, old sessile oak woods with Ilex and Blechnum in the British Isles, alluvial forests with <i>Alnus glutinosa</i> and Fraxinus excelsior and its populations of white clawed crayfish, sea lamprey, brook lamprey, salmon and otter.</p> <p>It would be possible to divert around the SPA but due to the length and large area covered by the River Moy it would not be possible to deliver this corridor without a crossing of the River Moy SAC without a c. 20km detour and back.</p>	<p>The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made using one of existing road bridges across the River Moy;</li> <li>2. Where engineering works to a road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or white-clawed crayfish, salmon or lamprey populations;</li> <li>3. If a new bridge is required, the following general requirements should be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC/SPA boundaries and/or must involve no loss of qualifying SAC habitat or supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding SPA birds, salmon, lamprey and otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of either species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ol> </li> </ol> <p>If detailed design work indicates that a new crossing of the River Moy SAC or Lough Conn and Lough Cullin SPA would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to make the 20km eastwards detour to avoid the River Moy to demonstrate no adverse effect on site integrity.</p>

Route	Assessment	Mitigation or avoidance measure to be included in NCN Plan
<p>Corridor 12 (Galway to Castlebar)</p> <p>Corridor 13 (Castlebar to Longford)</p>	<p>In the vicinity of Lakeland Lower the entire 4km corridor for both routes traverses the River Moy SAC. Due to the length and large area covered by the River Moy it would not be possible to deliver this corridor without a crossing of the River Moy SAC without a c. 20km detour and back.</p>	<p>The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made using one of existing road bridges across the River Moy;</li> <li>2. Where engineering works to a road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or white-clawed crayfish, salmon or lamprey populations;</li> <li>3. If a new bridge is required, the following general requirements should be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding salmon, lamprey and otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of either species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ol> </li> </ol> <p>If detailed design work indicates that a new crossing of the River Moy SAC would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to make the 20km eastwards detour to avoid the River Moy to demonstrate no adverse effect on site integrity.</p>

Route	Assessment	Mitigation or avoidance measure to be included in NCN Plan
<p>Corridor 19 (Limerick to Portlaoise)</p>	<p>Between Ballyduff and Carrowreagh the entire 4km corridor lies within Slieve Bloom Mountains SPA for at least 5km and it also passes through the SAC at Lacka. At Lacka the 4km buffer also crosses the River Barrow And River Nore SAC.</p> <p>The Slieve Bloom Mountains SAC is designated for its wet heaths with <i>Erica tetralix</i>, blanket bogs and alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i>. The SPA is designated for its hen harrier population. The River Barrow and Nore SAC is designated for its estuaries, mudflats and sandflats not covered by seawater at low tide, reefs, <i>Salicornia</i> and other annuals colonising mud and sand, Atlantic salt meadows, Mediterranean salt meadows, Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and Callitricho-Batrachion vegetation, European dry heaths, Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, Petrifying springs with tufa formation, Old sessile oak woods with Ilex and Blechnum in the British Isles, Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i>, Desmoulin's Whorl Snail, Freshwater Pearl Mussel, White-clawed Crayfish, Sea Lamprey, Brook Lamprey, River Lamprey, Twaite Shad, Salmon, Otter, Killarney Fern and Nore Pearl Mussel.</p> <p>There is no way to make the connection to Portlaoise without traversing the River Barrow &amp; River Nore SAC and/or the River Nore SPA.</p>	<p>The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the corridor will follow the existing road through the SAC/SPA;</li> <li>2. Where engineering works to the road would be required to render it suitable, there must be no loss of SAC habitat and an assessment would be required to ensure there was no loss of functionally-linked habitat that might affect the ability of the SPA to support its hen harrier population. Construction must be timed to avoid the sensitive season for hen harrier.</li> <li>3. Where engineering works to a road bridge across the River Barrow &amp; River Nore SAC would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. They must be situated so that no loss of SAC plant species would arise. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or Desmoulin's Whorl Snail, Freshwater Pearl Mussel, White-clawed Crayfish, Sea Lamprey, Brook Lamprey, River Lamprey, Twaite Shad, Salmon, Otter, Killarney Fern and Nore Pearl Mussel populations;</li> <li>4. If a new bridge is required, the following general requirements should be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC/SPA boundaries and/or must involve no loss of qualifying SAC habitat or supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding hen harrier, otter and qualifying fish species will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of any species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> </ol> </li> </ol>

Route	Assessment	Mitigation or avoidance measure to be included in NCN Plan
		<p>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</p> <p>If detailed design work indicates that any improvements to the existing road through the Slieve Bloom Mountains SAC/SPA or a new crossing of the River Nore would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to end before Portlaoise to demonstrate no adverse effect on site integrity.</p>
<p>Corridor 20 (Limerick to Athlone)</p>	<p>At Templedeew the entire 4km corridor crosses the River Shannon Callows SAC and Middle Shannon Callows SPA. The SAC is designated for Molinia meadows on calcareous, peaty or clayey-silt-laden soils, lowland hay meadows, alkaline fens, limestone pavements, alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> and its population of otter. The SPA is designated for whooper swan, wigeon, corncrake, golden plover, lapwing, back-tailed godwit, black-headed gull and its wetland and waterbird assemblage.</p> <p>There is no way to make the connection to Athlone without crossing the River Shannon and thus traversing the SAC and/or SPA or crossing the River Suck Callows SPA.</p>	<p>The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made one of the existing road bridges across the River Shannon;</li> <li>2. Where engineering works to a road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks;</li> <li>3. If a new bridge is required, the following general requirements should be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC/SPA boundaries and/or must involve no loss of qualifying SAC habitat or supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding SPA birds and otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of either species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ol> </li> </ol>

Route	Assessment	Mitigation or avoidance measure to be included in NCN Plan
		<p>If detailed design work indicates that a new crossing of the River Shannon would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to end south of the River Shannon to demonstrate no adverse effect on site integrity.</p>
<p>Corridor 21 (Galway to Athlone)</p>	<p>At Ballinasloe the entire 4km corridor traverses the River Suck Callows SPA. The SPA is designated for its population of whooper swan, wigeon, golden plover, lapwing, Greenland white fronted goose and its wetland and waterbird assemblage.</p> <p>There is no way to make the connection to Athlone without crossing the River Suck Callows SPA or crossing the River Shannon (and its European sites).</p>	<p>The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made one of the existing road bridges across the River Suck;</li> <li>2. Where engineering works to a road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity;</li> <li>3. If a new bridge is required, the following general requirements should be followed in designing and assessing the structure:               <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SPA boundaries and/or must involve no loss of supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure that no damage to banks occurs;</li> <li>c. A noise impact assessment of bridge construction regarding SPA birds will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population.</li> <li>d. Water quality protection measures will be required.</li> <li>e. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ol> </li> </ol> <p>If detailed design work indicates that a new crossing of the River Suck would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to end south of the River Suck to demonstrate no adverse effect on site integrity.</p>
<p>Corridor 25 (Tralee to Limerick)</p>	<p>At Ballynageragh, Ballyhorgan East and Shanbally the entire 4km corridor traverses the Lower River Shannon SAC. The SAC is designated for sandbanks which are slightly covered by sea water all the time, estuaries, mudflats and sandflats not covered by seawater at low tide, coastal lagoons, large shallow inlets and bays, reefs, perennial vegetation of stony banks, vegetated sea cliffs of the Atlantic and Baltic coasts, Salicornia and other annuals colonising mud and sand, Atlantic salt meadows, Mediterranean salt meadows, water courses of plain to montane levels with the Ranunculus fluitantis and Callitriche-Batrachion vegetation, Molinia meadows on calcareous, peaty or clayey-silt-laden soils, alluvial forests with Alnus glutinosa and</p>	<p>The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the corridor will follow existing roads through the SPA and across the SAC river;</li> <li>2. Where engineering works to the road would be required to render it suitable, an assessment would be required to ensure there was no loss of functionally-linked habitat that might affect the ability of the SPA to support its hen harrier population. Construction must be timed to avoid the sensitive season for hen harrier.</li> <li>3. Where engineering works to a road bridge across the Lower River Shannon SAC would be required to render it suitable, any permanent works must remain out of the water column,</li> </ol>



Route	Assessment	Mitigation or avoidance measure to be included in NCN Plan
	<p>Fraxinus excelsior and its populations of freshwater pearl mussel, sea lamprey, brook lamprey, river lamprey, salmon, otter and bottlenose dolphin. Between Doonakenna and Glendarragh much of the 4km corridor lies across Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. The SPA is designated for its population of hen harrier.</p> <p>It would be possible to make the connection to Limerick without traversing the SPA by moving the corridor south of the SPA but it is not possible to make the connection to Limerick without traversing either the Lower River Shannon SAC or the Blackwater River SAC.</p>	<p>unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. They must be situated so that no loss of SAC plant species would arise. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or qualifying fish and dolphin populations;</p> <p>4. If a new bridge is required, the following general requirements should be followed in designing and assessing the structure:</p> <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC/SPA boundaries and/or must involve no loss of qualifying SAC habitat or supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding hen harrier, otter and qualifying fish and dolphin species will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of any species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ol> <p>If detailed design work indicates that any improvements to existing roads through the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA, or a new crossing of the River Shannon, would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to end before Limerick to demonstrate no adverse effect on site integrity.</p>
<p>Corridor 36 (Cork to Waterford)</p>	<p>Between Muckridge and Tinnabinna the entire 4km corridor traverses the Blackwater Estuary SPA and Blackwater River (Cork/Waterford) SAC and at Killongford it traverses Dungarvan Harbour SPA.</p>	<p>The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the corridor will follow existing roads through the SPA and across the SAC;</li> <li>2. Where engineering works to the bridge and roads through the SAC/SPAs would be required to render it suitable, an assessment would be required to ensure there was no</li> </ol>

Route	Assessment	Mitigation or avoidance measure to be included in NCN Plan
	<p>Blackwater River SAC is designated for its estuaries, mudflats and sandflats not covered by seawater at low tide, perennial vegetation of stony banks, Salicornia and other annuals colonising mud and sand, Atlantic salt meadows, Mediterranean salt meadows, water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation, old sessile oak woods with Ilex and Blechnum in the British Isles, alluvial forests with Alnus glutinosa and Fraxinus excelsior, freshwater pearl mussel, white-clawed crayfish, sea lamprey, brook lamprey, river lamprey, twaite shad, salmon, otter and Killarney fern.</p> <p>Dungarvan Harbour SPA is designated for its great crested grebe, light-bellied brent goose, shelduck, red-breasted merganser, oystercatcher, golden plover, grey plover, lapwing, knot, dunlin, black-tailed godwit, bar-tailed godwit, curlew, redshank, turnstone and its population of wetland and waterbirds.</p> <p>It would not be possible to make the connection to Waterford without traversing the River Blackwater SAC.</p>	<p>loss of SAC habitat or of functionally-linked habitat that might affect the ability of the SPA to support its bird population. Construction must be timed to avoid the winter period.</p> <ol style="list-style-type: none"> <li>3. Where engineering works to a road bridge across the Blackwater River SAC would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. They must be situated so that no loss of SAC plant species would arise. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or qualifying fish populations;</li> <li>4. If a new bridge is required, the following general requirements should be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC/SPA boundaries and/or must involve no loss of qualifying SAC habitat or supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding hen harrier, otter and qualifying fish species will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of any species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ol> </li> </ol> <p>If detailed design work indicates that any improvements to existing roads through the SPA, or a new crossing of the Blackwater River, would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to divert to cross where the River Blackwater is narrower and/or to divert around the Dungarvan Harbour SPA between Killongford and Dungarvan to demonstrate no adverse effect on site integrity.</p>

Route	Assessment	Mitigation or avoidance measure to be included in NCN Plan
<p>Corridor 37 (Cork to Fermoy)</p>	<p>At Ballinterry the entire 4km route corridor traverses the Blackwater River (Cork/Waterford) SAC.</p> <p>It would be possible to route around the SAC with a c. 12km diversion to the west.</p>	<p>The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the corridor will follow existing road bridges across the SAC;</li> <li>2. Where engineering works to any bridge across the SAC would be required to render it suitable, an assessment would be required to ensure there was no loss of SAC habitat.</li> <li>3. Where engineering works to a road bridge across the Blackwater River SAC would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. They must be situated so that no loss of SAC plant species would arise. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or qualifying fish populations;</li> <li>4. If a new bridge is required, the following general requirements should be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding hen harrier, otter and qualifying fish species will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of any species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ol> </li> </ol> <p>If detailed design work indicates that a new crossing of the Blackwater River, would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to divert to west around the SAC to demonstrate no adverse effect on site integrity.</p>

Route	Assessment	Mitigation or avoidance measure to be included in NCN Plan
<p>Corridor 38 (Cork to Limerick)</p>	<p>The entire 4km corridor traverses the Blackwater River (Cork/Waterford) SAC at Mallow.</p> <p>It would be possible to route around the SAC with a c. 12km diversion to the west.</p>	<p>The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the corridor will follow existing road bridges across the SAC;</li> <li>2. Where engineering works to any bridge across the SAC would be required to render it suitable, an assessment would be required to ensure there was no loss of SAC habitat.</li> <li>3. Where engineering works to a road bridge across the Blackwater River SAC would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. They must be situated so that no loss of SAC plant species would arise. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or qualifying fish populations;</li> <li>4. If a new bridge is required, the following general requirements should be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding otter and qualifying fish species will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of any species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ol> </li> </ol> <p>If detailed design work indicates that a new crossing of the Blackwater River, would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to divert to west around the SAC to demonstrate no adverse effect on site integrity.</p>

Route	Assessment	Mitigation or avoidance measure to be included in NCN Plan
<p>Corridor 40 (Limerick to Kilkenny)</p>	<p>Between Newport and Kilcommon the entire 4km corridor encompasses the Slievefelim to Silvermines Mountains SPA and Lower River Shannon SAC. The SPA is designated for its hen harrier population. The reasons for SAC designation have already been given.</p> <p>At Birchhill the entire 4km corridor traverses the Lower River Suir SAC. The SAC is designated for Atlantic salt meadows, Mediterranean salt meadows, water courses of plain to montane levels with the Ranunculus fluitantis and Callitriche-Batrachion vegetation, Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, old sessile oak woods with Ilex and Blechnum in the British Isles, alluvial forests with Alnus glutinosa and Fraxinus excelsior, Taxus baccata woods of the British Isles and its populations of freshwater pearl mussel, white clawed crayfish, sea lamprey, brook lamprey, river lamprey, twaite shad, salmon and otter.</p> <p>It would be possible to route the corridor south of the SPA and north of the Lower River Suir SAC. However, it would not be possible to make the connection with Kilkenny without traversing the Lower River Shannon.</p>	<p>The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the corridor will follow existing roads through the SPA and across the SAC river;</li> <li>2. Where engineering works to the road would be required to render it suitable, an assessment would be required to ensure there was no loss of functionally-linked habitat that might affect the ability of the SPA to support its hen harrier population. Construction must be timed to avoid the sensitive season for hen harrier.</li> <li>3. Where engineering works to a road bridge across the Lower River Shannon SAC or Lower River Suir SAC would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. They must be situated so that no loss of SAC plant species would arise. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or qualifying fish and dolphin populations;</li> <li>4. If a new bridge is required, the following general requirements should be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC/SPA boundaries and/or must involve no loss of qualifying SAC habitat or supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding hen harrier, otter and qualifying fish and dolphin species will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of any species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ol> </li> </ol>

Route	Assessment	Mitigation or avoidance measure to be included in NCN Plan
		<p>If detailed design work indicates that any improvements to existing roads through the Slievefelim to Silvermines Mountains SPA, or a new crossing of the River Shannon or Suir, would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to divert south of the SPA and north of the River Suir to demonstrate no adverse effect on site integrity.</p>
<p>Corridor 49 (Enniscorthy to Wicklow)</p>	<p>At Enniscorthy, Clovass and Clonhenret the entire 4km corridor traverses the Slaney River Valley SAC. The SAC is designated for estuaries, mudflats and sandflats not covered by seawater at low tide, Atlantic salt meadows, Mediterranean salt meadows, water courses of plain to montane levels with the Ranunculus fluitantis and Callitriche-Batrachion vegetation, old sessile oak woods with Ilex and Blechnum in the British Isles, alluvial forests with Alnus glutinosa and Fraxinus excelsior and its populations of freshwater pearl mussel, sea lamprey, brook lamprey, river lamprey, twaite shad, salmon, otter and harbour seal.</p> <p>It would be possible to avoid any crossings of the SAC by moving the corridor approximately 4km to the east.</p>	<p>The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the corridor will follow existing road bridges across the SAC;</li> <li>2. Where engineering works to any bridge across the SAC would be required to render it suitable, an assessment would be required to ensure there was no loss of SAC habitat.</li> <li>3. Where engineering works to a road bridge across the Slaney River would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or qualifying fish or seal populations;</li> <li>4. If any new bridges are required, the following general requirements should be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding otter and qualifying fish and seal species will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of any species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> </ol> </li> </ol>

Route	Assessment	Mitigation or avoidance measure to be included in NCN Plan
		<p>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</p> <p>If detailed design work indicates that a new crossing of the Blackwater River, would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to divert east around the SAC to demonstrate no adverse effect on site integrity.</p>

## Loss of Functionally Linked Habitat

4.56 This is defined as the loss of habitat which is outside of the boundary of a European site, but which is critical to its functioning. For example, the loss of habitat outside of an SPA which is used for foraging purposes by qualifying bird species for which the SPA is designated, is regarded as loss of functionally-linked habitat. The distance related to loss of functionally-linked habitat is dependent on the species in question and can vary greatly. A variety of species specific buffers are listed within Table 5 below to give an overview of distances that may need to be considered. This is not intended to be a comprehensive list of all mobile species for which European sites in Ireland are designated.

**Table 5. Species-specific functionally-linked habitat buffer distances**

SPECIES	BUFFER DISTANCE
<i>Invertebrates</i>	
Freshwater pearl mussel <i>Margaritifera margaritifera</i>	Use of a screening buffer not appropriate for this species. The possibility of an impact pathway for freshwater pearl mussel relies on there being hydrological connectivity to a development, rather than being located within a certain distance.
<i>Fish</i>	
Sea lamprey <i>Petromyzon marinus</i> Brook lamprey <i>Lampetra planeri</i> River lamprey <i>Lampetra fluviatilis</i> Atlantic salmon <i>Salmo salar</i>	Use of a screening buffer not appropriate for fish species. Pathway for impacts depends largely on there being a hydrological connection between the development and the qualifying fish species of a given SAC. The source-pathway-receptor approach must therefore be adopted, and distances over which effects could occur will vary accordingly.
<i>Mammals</i>	
Otter <i>Lutra lutra</i>	150m (National Roads Authority, 2008)
Lesser horseshoe bat <i>Rhinolophus hipposideros</i>	2km <sup>7</sup>
<i>Birds</i>	
Barnacle goose <i>Branta leucopsis</i>	20km (Scottish Natural Heritage, 2016; Natural England, 2019)
Greenland white-fronted goose <i>Anser albifrons flavirostris</i>	10 km (Natural England, 2019)
Corncrake <i>Crex crex</i>	1.5km (Bright, et al., 2008)
Whooper swan <i>Cygnus cygnus</i>	5km (Scottish Natural Heritage, 2016)
Greylag goose <i>Anser anser</i>	2km (Scottish Natural Heritage, 2016)
Golden plover <i>Pluvialis apricaria</i> and lapwing <i>Vanellus vanellus</i>	20km (Natural England, 2019)
Merlin <i>Falco columbarius</i>	5km (Scottish Natural Heritage, 2016)
Hen harrier <i>Circus cyaneus</i>	2km (Scottish Natural Heritage, 2016)
Peregrine falcon <i>Falco peregrinus</i>	2km (Scottish Natural Heritage, 2016)

<sup>7</sup> <https://www.bats.org.uk/our-work/landscapes-for-bats/core-sustenance-zones>



SPECIES	BUFFER DISTANCE
Pink-footed goose <i>Anser brachyrhncus</i>	20km (Scottish Natural Heritage, 2016)
Wintering waders (except golden plover and lapwing), Brent goose <i>Branta bernicla</i> and wigeon <i>Anas penelope</i>	2km (Natural England, 2019)

- 4.57 As explained in the methodology, a 2km zone has been used around each European site to identify greatest risk to functionally-linked land. Even for birds and other wildlife that can travel further than 2km from their European sites to forage or roost, not all habitat within the wider zone is of equal value with the habitat of greatest importance in sustaining the SPA or SAC population often being located closest to the SAC/SPA. Published guidance regarding distances from SPA boundaries at which habitat for various species is likely to be significant in sustaining populations cites an impact risk zone of 2km from the designated site. Moreover, given the nature of a cycle way even new construction would be likely to result in insignificant levels of habitat loss from supporting habitat, if any. Therefore it is reasonable taking into account the likely greater value of functionally linked habitat closer to the European site and the relatively low risk of significant functionally-linked habitat loss posed by creation of a new cycleway a 2km zone of influence is appropriate for identifying European sites at greatest risk from the NCN Plan.
- 4.58 As identified in Table 6 and Appendix C at the rear of this report, 87 European sites designated for mobile species overlap with at least one 4km wide NCN corridor. Establishment of the cycle routes could therefore affect any of these sites' mobile Qualifying Interests depending on the precise location of the route, the use of any functionally-linked land/water within those corridors by the mobile species for which the European sites are designated, and the exact nature of the works proposed at each location. Appendix C identifies that all but three corridors (Corridors 26, 57 and 68) have at least one SPA (or SAC designated for mobile species) within the proposed 4km wide corridor.
- 4.59 The sites are: Ballyallia Lough SPA, Ballykenny-Fisherstown Bog SPA, Ballymacoda Bay SPA, Ballynafagh Lake SAC, Ballysadare Bay SPA, Blackwater Callows SPA, Blackwater Estuary SPA, Blackwater River SAC, Boyne Estuary SPA, Bunduff Lough And Machair/Trawalua/Mullaghmore SAC, Caherglassaun Turlough SAC, Carlingford Lough SPA, Castlemaine Harbour SAC, Clew Bay Complex SAC, Coole-Garryland SPA, Cork Harbour SPA, Cregganna Marsh SPA, Cummeen Strand SPA, Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, Donegal Bay SPA, Dromore Woods And Loughs SAC, Drumcliff Bay SPA, Dundalk Bay SPA, Dungarvan Harbour SPA, East Burren Complex SAC, Galway Bay Complex SAC, Inner Galway Bay SPA, Killala Bay/Moy Estuary SAC, Killarney National Park SPA, Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC, Lough Arrow SPA, Lough Conn and Lough Cullin SPA, Lough Corrib SAC, Lough Derg (Shannon) SPA, Lough Ennell SPA, Lough Eske and Ardnamona Wood SAC, Lough Fingall Complex SAC, Lough Gill SAC, Lough Melvin SAC, Lough Oughter And Associated Loughs SAC, Lough Oughter SPA, Lough Rea SPA, Lough Ree SAC, Lough Ree SPA, Lough Swilly SAC, Lough Swilly SPA, Lower River Shannon SAC, Lower River Suir SAC, Malahide Estuary SPA, Middle Shannon Callows SPA, Mongan Bog SPA, Moyree River System SAC, Mullaghanish to Musheramore Mountains SPA, Newhall and Edenvale Complex SAC, Old Farm Buildings, Ballymacrogan SAC, Poulaphouca Reservoir SPA, Rahasane Turlough SPA, River Barrow and River Nore SAC, River Boyne and River Blackwater SAC, River Boyne and River Blackwater SPA, River Finn SAC, River Little Brosna Callows SPA, River Moy SAC, River Nanny Estuary and Shore SPA, River Nore SPA, River Shannon and River Fergus Estuaries SPA, River Shannon Callows SAC, River Suck Callows SPA, Rogerstown Estuary SPA, Slaney River Valley SAC, Slaney River Valley SAC, Slieve Bloom Mountains SPA, Slievefelim to Silvermines Mountains SPA, Sligo/Leitrim Uplands SPA, South Dublin Bay and River Tolka Estuary SPA, Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA, The Gearagh SAC, The Gearagh SPA, The Murrough SPA, Tralee Bay and Magharees Peninsula, West to Cloghane SAC, Tralee Bay Complex SPA, Tramore Back Strand SPA, Unshin River SAC and Wexford Harbour and Slobs SPA.
- 4.60 Note that sites designated for marine mammals and seabirds are excluded on the basis that cycle routes will not affect functionally linked habitat for those species. As can be seen from Table 5 above, some species (particularly geese, lapwing and golden plover) can have core functionally-linked land areas such as high tide roosts and core foraging locations that lie considerably further from their SPAs than 2km. However, since the precise location of each future route of the NCN and how each section of the NCN might be created is a matter for detailed corridor design and finalisation (for example some stretches could consist

simply of adopting and designating existing cycleways), it would be speculative to discuss specific European sites any further afield.

- 4.61 The considerable width of the 4km wide NCN corridors compared to the narrow nature of the final cycle route that will be identified within each corridor, and that parts of any route could utilise existing infrastructure and will do so where feasible, mean that it will be possible to design final routes in a way that the individual initiatives could avoid functionally-linked habitat or avoid having a likely significant effect on such habitat. As such a paragraph in the NCN Plan states that each proposed cycle route should undertake a project level Appropriate Assessment, to determine whether any interventions would have an adverse effect with regards to loss of functionally linked habitat for mobile SAC or SPA features. More detailed advice is provided for each of the NCN Corridors in Appendix C where possible.
- 4.62 For example, in Appendix C a version of the following recommendation is made for each relevant corridor: *'Since a large part of the corridor either overlaps with, or lies within 2km of, Lough Swilly SPA, there will need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented'*.
- 4.63 With the inclusion of this text in the NCN Plan, it is considered that a sufficient framework exists to ensure that the recommendations could be designed and delivered in such a way as to avoid an adverse effect on the integrity of European sites and the NCN Plan could be concluded not to have an adverse effects on the integrity of any European sites.

## 5. In Combination Assessment

- 5.1 The Plans which have been considered within the in-combination assessment are listed within Chapter 2 (Methodology).

### National and Regional Plans

- 5.2 The Climate Action Plan follows the Climate Act 2021, which commits Ireland to a legally binding target of net-zero greenhouse gas emissions no later than 2050, and a reduction of 51% by 2030. These targets are a key pillar of the Programme for Government. The plan sets out indicative ranges of emissions reductions for each sector of the economy. It also sets out the actions needed to deliver on these climate targets. The plan calls for a significant reduction in transport emissions by 2030. (Following on from this, a target of a 50% reduction has been set). Measures will be aimed at enabling 500,000 extra walking, cycling and public transport journeys per day by 2030. An Annex to the plan outlines 493 actions to be taken to meet the targets outlined in the plan. Several actions are related to delivering cycling and walking infrastructure and encouraging an increased level of modal shift towards active travel and away from private car use, while Action 232 specifically calls for the development of a coherent and connected National Cycle Network Plan. The NCN Plan will therefore be key to delivering objectives of the Climate Action Plan but the Action Plan is an intentionally high level document and does not set out or commit to detailed specific schemes. As such it will not have in combination effects with the NCN Plan.
- 5.3 Cycling and walking has been given a high level of prominence and ongoing importance in the October 2020 Programme for Government (PfG) Statement. Significant funding is earmarked to improve the facilities and functions to enable people to travel by bicycle (and foot), ultimately improving people's quality of life, air quality, as well as Ireland's commitments to sustainability and decarbonisation. The PfG mandates that every local authority, with assistance from the National Transport Authority (NTA), adopts a high-quality cycling policy, carries out an assessment of their roads network and develops cycle network plans, which will be implemented with the help of a suitably qualified Cycling Officer with clear powers and roles. Development of the NCN will take cognisance of the county-level cycle network plans and the need for appropriate interface between networks. As well as the mandated development of cycle network planning, delivery and positioning of qualified personnel, the PfG seeks more cycling to schools, widening of cycling incentives for employment (Bike to Work) and ongoing enhancement of safety through policy and legislation review. Development of the NCN is consistent with the ambitions outlined in the Programme for Government. The Programme for Government does not itself set out any specific schemes but rather provides direction to lower-tier authorities when they are developing their plans and schemes. As such the Programme for Government will not have in combination effects with the NCN Plan.
- 5.4 The National Planning Framework (NPF) 2040 document was published in February 2018 and sets out Ireland's planning policy direction for the period up to 2040. The NPF forecasts a substantial increase in population across all regions of the country which, along with associated employment and educational use, will lead to a subsequent increase in demand for travel. Within this context, several of the NPF's National Strategic Outcomes are particularly relevant to the development of the NCN, including:
- NSO 2: Enhanced Regional Accessibility.
  - NSO 3: Strengthened Rural Economies and Communities.
  - NSO 4: Sustainable Mobility.
  - NSO 8: Transition to a Low Carbon and Climate Resilient Economy.
- 5.5 The Framework outlines a policy objective to improve accessibility between centres of scale separate from Dublin, with a focus on key routes to a number of larger and regionally distributed centres. The development of the NCN will contribute to this. As with the Programme for Government, the NPF does not itself set out any specific schemes but rather provides direction to lower-tier authorities when they are developing their plans and schemes, and the NCN is intended to partly deliver the objectives of the NPF. As such the NPF will not have in combination effects with the NCN Plan.
- 5.6 The National Development Plan (NDP) is the most recent infrastructure investment plan adopted by the government. The Plan sets out the investment priorities of the state from 2021 to 2030 and supports the delivery of Project Ireland 2040 through public capital investment over the next nine years and guides

national, regional and local planning and investment decisions in Ireland over the next two decades. The NDP has been developed with a strong focus on climate action and the environment, with a key aim to catalyse a shift towards accessibility-based mobility systems by encouraging people to adopt more sustainable mobility options, particularly cycling and walking. The NCN Plan is specifically referenced in the NDP and is the mechanism by which part of the NDP will be delivered. The NDP is a funding and investment framework and therefore does not detail specific schemes or imply consent for particular plans or schemes. Therefore, as with the NPF, it will not have in combination effects with the NCN Plan.

- 5.7 The National Investment Framework for Transport in Ireland (NIFTI) is intended to enable the delivery of Project Ireland 2040 by guiding the appropriate investment in Ireland's roads, active travel and public transport infrastructure. NIFTI establishes four investment priorities, of which new projects must align with at least one: decarbonisation, protection and renewal, mobility of people and goods in urban areas and enhanced regional and rural connectivity. The NCN Plan will deliver the objectives of NIFTI but since the NIFTI is primarily a funding strategy it does not detail specific schemes or imply consent for particular plans or schemes. Therefore, as with the NPF, it will not have in combination effects with the NCN Plan.
- 5.8 The Outdoor Recreational Plan (ORP) sets out a strategy to revolutionise the provision of outdoor recreational facilities and services on public owned land. The plan sets out to deliver world-class outdoor infrastructure and services in Ireland by taking advantage of the potential of resources the state already owns. Chapter 2.5 of the Plan, "Healthy Ireland", outlines a framework for improved health and well-being and notes that goals outlined in this framework could be met by increasing the amount of public recreational space available. These goals include: increasing the proportion of people who are healthy at all stages of life, reducing health inequalities and providing opportunities for healthy outdoor recreation, close to people and in all parts of the country. Development of the NCN will contribute to achieving these goals by providing increased facilities for active modes. As with the other strategies and national plans discussed up to this point, the ORP is a very high-level declaration of policy and does not detail specific schemes or imply consent for particular plans or schemes. Therefore, it will not have in combination effects with the NCN Plan.
- 5.9 The 2021 GDA Cycle Network Plan aims to strengthen access and local permeability within Dublin and GDA towns and cycling connectivity between them. The 2021 GDA Cycle Network Plan covers the entire Greater Dublin Area and therefore includes proposals for improvements within district centres and county towns throughout Dublin, Meath, Kildare and Wicklow. The updated plan also outlines a new classification system for cycle routes, which represents a step change towards more tailored cycling environments. The revised classification differentiates between 'utility' movements and 'leisure' movements, acknowledging that different types of cycling facilities are appropriate for different intended uses, although it may sometimes be the case that a single route corridor would be appropriate for both uses. These proposals and the potential for overlap / interface with the NCN were considered during the NCN Plan development. There is clearly potential for specific cycle routes in the Cycle Network Plan to be developed at approximately the same time as those in the Dublin area for the NCN Plan (51 Bray to Dublin, 67 Dublin to Leixlip, 68 Naas to Dublin, 69 Swords to Dublin Airport, 70 Celbridge to Dublin, 71 Grand Canal Greenway, 72 Dublin Port to Heuston Station via Connolly Station and 73 Swords to Dublin) and for in combination effects to result either during construction (e.g. noise and air quality impacts) or operation (increased recreational accessibility to sensitive European sites). However, the mitigation hierarchy and strategy set out within the NCN Plan and this NIS will ensure that any contribution of the NCN Plan to in combination effects will be avoided or adequately mitigated. As with the NCN Plan the GDA Cycle Network Plan will require its own AA Screening and NIS (where necessary) and to detail required mitigation.

## County Development Plans

- 5.10 Development Plans are the most likely plans to affect the NCN in combination as the main source of additional recreational pressure is associated with increased housing and an increased residential population. Recreation is likely to be the main impact that could arise in-combination with the proposed NCN Corridors if the final routes do not take account of potential to increase recreational access to European sites where that does not already exist. The County Development Plans reviewed set out the housing needed for the plan period. In total the County Development Plans allocate over 247,131 net new dwellings over the plan periods. This may work in combination with the NCN if the proposed cycle corridors created access to recreationally sensitive areas of European sites to more visitors.
- 5.11 However, many County Development Plans have policies within them to ensure that the plan itself does not cause adverse impacts alone or in-combination, such as the adopted Wicklow County Development Plan 2016-2022 (Wicklow County Council, 2016) which states "*NH2 – 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 projects<sup>8</sup>)”.*

- 5.12 Additionally, each of the Development Plans are required to have an Appropriate Assessment to assess their own contribution to impacts such as recreational pressure, as well as recreational pressure in combination, and would only be adopted where there was no adverse impact on European sites. For example: the conclusion of the adopted (2016-2022) Wicklow County Development Plan Appropriate Assessment (Wicklow County Council & CAAS Ltd, 2016) states: “*Stage 1 screening and Stage 2 appropriate assessment of the Wicklow County Development Plan 2016 - 2022 have been carried out. Implementation of the Plan has the potential to result in impacts to the integrity of the Natura 2000 network, if unmitigated.*

*The risks to the safeguarding and integrity of the qualifying interests and conservation objectives of the Natura 2000 network have been addressed by the inclusion of mitigation measures 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.*

*Having incorporated mitigation measures, it is considered that the Plan will not have a significant adverse effect on the integrity of the Natura 2000 network.”*

- 5.13 At this strategic stage of the NCN the assessment has focussed on the 4km wide NCN corridors which are discussed collectively in sections 4 and 5 of this report and are detailed corridor by corridor in Appendix C. The work required to create future routes of the NCN in each corridor is also undetermined at this stage which means it is unknown where specific activities will be carried out and what they may be. However, this allows the cycle routes to be designed in a way to avoid adverse impact upon European sites. To ensure no adverse effect on European sites a paragraph similar to the above NH2 Policy from the Wicklow County Development Plan 2016-2022 will be incorporated into the NCN Plan with the addition of a sentence which provides for down the line assessment of each project for example: “*each project brought forward under the NCN Plan should be subject to a project level appropriate assessment screening<sup>2</sup>”.* Moreover, a series of specific recommendations have been provided in this report which will guide delivery of the final NCN Corridors. This includes a specific recommendation regarding careful routing to avoid recreational pressure effects: “*Where the cycle route will traverse a European site there will also need to be consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable*”. This will be a general requirement within the NCN Plan. It also provides other specific restrictions including ensuring any new construction is kept at least 200m from any European sites where possible, using existing infrastructure where possible and appropriate, particularly regarding any roads and bridges to carry the cycle route over riverine European sites, and ensuring no new lighting is introduced in currently unlit areas unless it can be demonstrated that there would be no adverse effect on site integrity.
- 5.14 These measures will give a robust framework to the NCN Plan for projects brought forward under the plan in order to ensure they can be delivered in such a way as to have no adverse effect on European sites during construction or operation. If the delivery of each corridor can avoid adverse effects on European sites entirely then it will also address its contribution to any ‘in combination’ effect. With the approach and measures included in the NCN Plan, it can be concluded that the NCN Plan will not adversely affect any European site either alone or in combination with other plans and projects.

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<sup>8</sup> 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 project to proceed; and c) adequate compensatory measures in place.

## 6. Conclusions

6.1 An Appropriate Assessment Screening, and an Appropriate Assessment have been undertaken for the 4km wide cycle corridors identified in the NCN Plan. A total of 173 European sites were located within the network. These are shown in Table 6 of Appendix A.

6.2 Taking into consideration each European site's qualifying features and their vulnerabilities as well as potential impacts the following impact pathways were identified as having potential to create a significant effect upon European sites:

- Airborne pollution
- Disturbance of qualifying features
  - Noise/light/visual during construction and operation.
  - Recreational pressure
- Waterborne pollution
- Direct loss of habitat
- Loss of functionally-linked habitat

6.3 Each of these pathways has been discussed within the Appropriate Assessment (Chapter 4). At this stage the 4km wide corridors provide the ability for all final cycle routes to be designed in such a way as to minimise and potentially avoid impacts rendering them non-significant. However, to ensure a robust framework to capture any significant effects the following measures are included in the NCN Plan:

- i. The following text is included in the NCN Plan to provide a framework of protection for European 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 projects<sup>9</sup>) and each project brought forward under the NCN Plan should be subject to a project level appropriate assessment screening".;*
- ii. The NCN Plan includes a commitment that no project that has an adverse effect on the integrity of a European site will be progressed;
- iii. The NCN Plan states that each project brought forward through the Plan will be required to produce a CEMP to ensure compliance with all relevant legislation;
- iv. The following text is included in the NCN Plan which will apply to all routes except the seventeen corridors where the entire corridor overlaps with at least one European site: *'In determining the final route alignment, there will be a general principle of avoiding any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route, where feasible, and there should be no new lighting introduced in currently unlit areas unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is required to develop the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. There will need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required, followed by*

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<sup>9</sup> 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 project to proceed; and c) adequate compensatory measures in place.

*micro-design adjustments to ensure the route results in no material loss, or, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented’.*

- 6.4 For each of the seventeen corridors whose entire width overlaps with at least one European site, Appendix C sets out the detailed approach to final route design and mitigation. The overlap is generally due to the need to traverse a riverine European site in order to complete the route. The approach is slightly different depending on the interest features of the European sites involved but in broad terms the approach is:
- i. Where feasible the crossing will be made using the existing road bridges;
  - ii. Where engineering works to the road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary ‘in river’ works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or fish populations;
  - iii. If a new bridge crossing is required, the following general requirements should be followed in designing and assessing the structure:
    1. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;
    2. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;
    3. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above<sup>10</sup>.
    4. A noise impact assessment of bridge construction regarding salmon and otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of relevant species.
    5. Water quality protection measures will be required.
    6. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.
  - iv. If detailed design work indicates that a new crossing is required but it is not possible to deliver such a crossing without an adverse effect on site integrity, the identified potential alternative solutions should be taken forward, or the corridor otherwise revised to demonstrate no adverse effect on site integrity.
- 6.5 Finally, a text is included in the NCN Plan stating that initiatives brought forward under each of the proposed routes will require scrutiny, so should undertake a project level Appropriate Assessment to determine whether the initiative/route would have an adverse effect on the integrity of European sites either alone or in combination with other plans and projects.
- 6.6 Given the flexibility of design of the proposed cycle corridors and the measures outlined above to guide and influence final route selection and outlining the detailed work that would be needed to inform the AA for each final route it can be concluded that the NCN would not have an adverse effect European sites alone.
- 6.7 An in combination assessment was also undertaken of relevant plans and projects, which are listed in the Methodology (Chapter 2), which includes the County Development Plans of the Republic of Ireland. Given that each of the land use plans provide a policy for European site protection and each will have undergone their own appropriate assessment alone and in combination and would have concluded no adverse effects before the plans could become adopted, as well as the flexibility in design of the proposed NCN corridors and finally the measures outlined above, it can be concluded that the NCN Plan and the proposed cycle

<sup>10</sup> Broome, S.W., Craft, C.B., Struck, S.D. and M. San Clements. 2005. Effects of Shading from Bridges on Estuarine Wetlands. [pdf] Available at: <https://connect.ncdot.gov/projects/planning/RNAProjDocs/2001-12FinalReport.pdf>. A study undertaken by AECOM for a new bypass in the UK also investigated this issue, considering various different bridge types and dimensions across the country and the effect it had on riverine vegetation. This supported a preferred height:width ratio of 0.7 or above.

corridors would not have an adverse effect on the integrity of European sites, either alone or in combination with other plans and projects.



## 7. References

Bright, J. et al., 2008. Map of bird sensitivities to wind farms in Scotland: A tool to aid planning and conservation. *Biological Conservation*, 141( ), pp. 2342-2356..

Carlow County Council, 2015. *Carlow County Development Plan 2015 - 2021*. [Online] Available at: <https://www.carlow.ie/wp-content/uploads/2015/08/carlow-county-dev-plan-2015-2021.pdf> [Accessed 26 May 2022].

Carlow County Council, 2022. *Carlow Country Development Plan 2022 - 2028*. [Online] Available at: <https://consult.carlow.ie/system/files/materials/5/Carlow%20County%20Development%20Plan%202022%20%E2%80%93%202028%20Issues%20Paper.pdf> [Accessed 26 May 2022].

Cavan County Council, 2021. *Cavan County Development Plan 2022 - 2028*. [Online] Available at: [https://www.cavancoco.ie/file-library/planning/draft\\_writtenstatement\\_web.pdf](https://www.cavancoco.ie/file-library/planning/draft_writtenstatement_web.pdf) [Accessed 26 May 2022].

CJEU, 2004. *Judgment of the Court (Grand Chamber) of 7 September 2004. Landelijke Vereniging tot Behoud van de Waddenzee and Nederlandse Vereniging tot Bescherming van Vogels v Staatssecretaris van Landbouw, Natuurbeheer en Visserij..* [Online] Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:62002CJ0127> [Accessed 14 December 2021].

CJEU, 2005. *Judgment of the Court (Second Chamber) of 20 October 2005. Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland..* [Online] Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62004CJ0006> [Accessed 14 December 2021].

CJEU, 2014. *Judgment of the Court (Second Chamber) of 15 May 2014. T.C. Briels and Others v Minister van Infrastructuur en Milieu.* [Online] Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:62012CA0521> [Accessed 14 December 2021].

CJEU, 2018. *Judgment of the Court (Second Chamber) of 7 November 2018. Brian Holohan and Others v An Bord Pleanála..* [Online] Available at: <https://eur-lex.europa.eu/legal-content/GA/TXT/?uri=CELEX:62017CJ0461> [Accessed 14 December 2021].

CJEU, 2018. *Judgment of the Court (Seventh Chamber) of 12 April 2018. People Over Wind and Peter Sweetman v Coillte Teoranta.* [Online] Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62017CJ0323> [Accessed 14 December 2021].

Clare County Council, 2021. *Clare County Development Plan 2023 - 2029*. [Online] Available at: <https://clarecdp2023-2029.clarecoco.ie/stage2-draft/display/volume-1-written-statement-45158.pdf> [Accessed 26 May 2022].

Cole, D. N., 1995. Experimental trampling of vegetation. I. Relationship between trampling intensity and vegetation response. *Journal of Applied Ecology*, 32(1), pp. 203-214.

Cole, D. N., 1995. Experimental Trampling of Vegetation. II. Predictors of Resistance and Resilience. *Journal of Applied Ecology*, 32(1), pp. 215-224.

Cole, D. N. & Spildie, D. R., 1998. Hiker, horse and llama trampling effects on native vegetation in Montana, USA. *Journal of Environmental Management*, 53(1), pp. 61-71.

Cork County Council, 2022. *Cork County Development Plan 2022 - 2028*. [Online] Available at: [https://www.corkcoco.ie/sites/default/files/2022-01/Part%20a%20Combined%20Amendments%20Vol%201%20Ch%201-10%20for%2018th%20Jan\\_V2%20margins%20with%20covers.%20amended.pdf](https://www.corkcoco.ie/sites/default/files/2022-01/Part%20a%20Combined%20Amendments%20Vol%201%20Ch%201-10%20for%2018th%20Jan_V2%20margins%20with%20covers.%20amended.pdf) [Accessed 26 May 2022].

Cutts, N. & Allan, J., 1999. *Avifaunal Disturbance Assessment. Flood Defence Works: Salt End.*, s.l.: Environment Agency.

Cutts, N., Phelps, A. & Burdon D, 2009. *Construction and waterfowl: defining sensitivity, response, impacts and guidance*, s.l.: Humber INCA, Institute of Estuarine and Coastal Studies, University of Hull.

Department for Trade and Industry, 2006. *Aerial surveys of waterbirds in strategic wind farm areas: 2004/05*, London: HMSO.

DoEHLG, 2010. *Appropriate Assessment of Plans and Projects in Ireland; Guidance for Planning Authorities*, s.l.: Department of Environment, Heritage and Local Government.

Donegal County Council, 2018. *Donegal County Development Plan 2018 - 2024*. [Online] Available at: <https://www.donegalcoco.ie/media/donegalcountyc/planning/pdfs/viewdevelopmentplans/countydonegaldevelopmentplan2018-2024/partaandb/Part%20A%20The%20Strategic%20Plan%20and%20Part%20B%20Objectives%20and%20Policies.pdf> [Accessed 26 May 2022].

Dublin City Council, 2022. *Dublin City Development Plan 2022 - 2028*. [Online] Available at: <https://www.dublincity.ie/sites/default/files/2021-12/volume-1-draft-dublin-city-development-plan-2022-2028-low-res.pdf> [Accessed 26 May 2022].

Dún Laoghaire–Rathdown County Council, 2022. *Dún Laoghaire–Rathdown County Development Plan 2022 - 2028*. [Online] Available at: [https://www.dlrcoco.ie/sites/default/files/atoms/files/chapter\\_02\\_-\\_core\\_strategy.pdf](https://www.dlrcoco.ie/sites/default/files/atoms/files/chapter_02_-_core_strategy.pdf) [Accessed 26 May 2022].

European Commission, 2019. *Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive 92/43/EEC (2019/C 33/01)*, s.l.: European Commission.

European Commission, 2021. *Commission notice Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC 2021/C 437/01*. Luxembourg: Office of Official Publications of the European Communities.

Fingal County Council, 2022. *Draft Fingal County Development Plan 2023 - 2029*. [Online] Available at: <https://www.fingal.ie/sites/default/files/2022-03/fingal-development-plan-14.03.22-web.pdf> [Accessed 26 May 2022].

Galway County Council, 2022. *Galway County Development Plan 2022 - 2028*. [Online] Available at: <https://consult.galway.ie/en/consultation/draft-galway-county-development-plan-2022-2028/chapter/chapter-2-core-strategy-settlement-strategy-and-housing-strategy> [Accessed 26 May 2022].

Gill, J. A., Sutherland, W. J. & Norris, K., 1998. The consequences of human disturbance for estuarine birds. *RSPB Conservation Review*, Volume 12, pp. 67-72.

High Court, Ireland, 2019. *High Court Judicial Review; Eoin Kelly V An Bord Pleanála & Aldi Stores (Ireland) Limited (2017 No. 883 J.R.)*. s.l.:s.n.

Holman, C. et al., 2020. *A guide to the assessment of air quality impacts on designated nature conservation sites*, London: Institute of Air Quality Management.

Kerry County Council, 2022. *Kerry County Development Plan 2022 - 2028*. [Online] Available at: <https://consult.kerrycoco.ie/en/consultation/draft-kerry-county-development-plan-2022-2028/chapter/chapter-3-core-settlement-strategy#3.10> [Accessed 27 May 2022].

Kildare County Council, 2022. *Kildare County Development Plan 2023 - 2029*. [Online] Available at: <https://draftkildarecdp2023-2029.ie/> [Accessed 27 May 2022].

Kilkenny County Council, 2021. *Kilkenny City and County Development Plan 2021 - 2027*. [Online] Available at: <https://www.kilkennycoco.ie/eng/services/planning/development-plans/city-and-county-development-plan/vol1-master-ccdp-2-11-2021.pdf> [Accessed 27 May 2022].

Laois County Council, 2022. *Laois County Development Plan 2021 - 2027*. [Online] Available at: <https://laois.ie/wp-content/uploads/Volume-1-Written-Statement-of-Adopted-LCDP-2021-2027.pdf> [Accessed 27 May 2022].

Leitrim County Council, 2022. *Leitrim County Development Plan 2023 - 2027*. [Online] Available at: [https://leitrimcoco.ie/eng/Services\\_A-Z/Planning-and-Development/Development-Plans/Leitrim-County-Development-Plan-2023-%E2%80%93-2029/Volume-I-Written-Statement.pdf](https://leitrimcoco.ie/eng/Services_A-Z/Planning-and-Development/Development-Plans/Leitrim-County-Development-Plan-2023-%E2%80%93-2029/Volume-I-Written-Statement.pdf) [Accessed 27 May 2022].

Limerick City and County Council, 2022. *Draft Limerick County Development Plan 2022 - 2028*. [Online] Available at: <https://www.limerick.ie/council/services/planning-and-property/limerick-development-plan/draft-plan> [Accessed 27 May 2022].

Longford County Council, 2021. *Longford County Development Plan 2021 - 2027*. [Online] Available at: <https://www.longfordcoco.ie/services/planning/longford-county-development-plan-2021-2027/volume-1-written-statement-compressed.pdf> [Accessed 27 May 2022].

Louth County Council, 2021. *Louth County Development Plan 2021 - 2027*. [Online] Available at: <https://www.louthcoco.ie/en/publications/development-plans/louth-county-development-plan-2021-2027/chapter-3-web-.pdf> [Accessed 27 May 2022].

Mayo County Council, 2022. *Mayo County Development Plan 2021 - 2027*. [Online] Available at: <https://www.mayo.ie/getmedia/aae4ebe0-808a-40ac-a306-01d849cd1fa0/Vol-1-Draft-Mayo-County-Development-Plan-2021-2027-FINAL.pdf> [Accessed 27 May 2022].

Meath County Council, 2019. *Meath County Development Plan 2019 - 2025*. [Online] Available at: <https://monaghan.ie/planning/wp-content/uploads/sites/4/2019/04/Monaghan-County-Development-Plan-2019-2025-%E2%80%93-Written-Statement.pdf> [Accessed 27 May 2022].

Meath County Council, 2021. *Meath County Development Plan 2021 - 2027*. [Online] Available at: <https://consult.meath.ie/en/consultation/meath-adopted-county-development-plan/chapter/02-core-strategy> [Accessed 27 May 2022].

National Roads Authority, 2008. *Guidelines for the treatment of otters prior to the construction of national road schemes*. [Online] Available at: <https://www.tii.ie/tii-library/environment/construction-guidelines/guidelines-for-the-treatment-of-otters-prior-to-the-construction-of-national-road-schemes.pdf> [Accessed 19 January 2022].

Natural England, 2019. *Impact Risk Zones Guidance Summary - Sites of Special Scientific Interest Notified for Birds*. *Natural England Guidance Note.*, s.l.: Natural England.

NPWS, 2010. *Appropriate Assessment under Article 6 of the Habitats Directive; guidance for Planning Authorities. Circular NPW 1/10 & PSSP 2/10*, s.l.: National Parks and Wildlife Services; Department of Environment, Heritage and Local Government.

NPWS,	2022.	<i>Askeaton Fen</i>	<i>Complex</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002279">https://www.npws.ie/protected-sites/sac/002279</a>					
NPWS,	2022.	<i>Balla Turlough</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000463">https://www.npws.ie/protected-sites/sac/000463</a>					
NPWS,	2022.	<i>Ballintra</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000115">https://www.npws.ie/protected-sites/sac/000115</a>					
NPWS,	2022.	<i>Ballyallia Lake</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000014">https://www.npws.ie/protected-sites/sac/000014</a>					
NPWS,	2022.	<i>Ballymacoda (Clonpriest and Pillmore)</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000077">https://www.npws.ie/protected-sites/sac/000077</a>					
NPWS,	2022.	<i>Ballyman Glen</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000713">https://www.npws.ie/protected-sites/sac/000713</a>					
NPWS,	2022.	<i>Ballynafagh Bog</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000391">https://www.npws.ie/protected-sites/sac/000391</a>					
NPWS,	2022.	<i>Ballynafagh Lake</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/001387">https://www.npws.ie/protected-sites/sac/001387</a>					
NPWS,	2022.	<i>Ballyogan Lough</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000019">https://www.npws.ie/protected-sites/sac/000019</a>					
NPWS,	2022.	<i>Ballysadare Bay</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000622">https://www.npws.ie/protected-sites/sac/000622</a>					
NPWS,	2022.	<i>Ballyseedy Wood</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002112">https://www.npws.ie/protected-sites/sac/002112</a>					
NPWS,	2022.	<i>Ben Bulbin, Gleniff and Glenade</i>	<i>Complex</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000623">https://www.npws.ie/protected-sites/sac/000623</a>					
NPWS,	2022.	<i>Blackstairs Mountains</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000770">https://www.npws.ie/protected-sites/sac/000770</a>					
NPWS,	2022.	<i>Blackwater Callows</i>		SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004094">https://www.npws.ie/protected-sites/spa/004094</a>					
NPWS,	2022.	<i>Blackwater Estuary</i>		SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004028">https://www.npws.ie/protected-sites/spa/004028</a>					
NPWS,	2022.	<i>Blackwater River (Cork/Waterford)</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002170">https://www.npws.ie/protected-sites/sac/002170</a>					
NPWS,	2022.	<i>Boleybrack Mountain</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002032">https://www.npws.ie/protected-sites/sac/002032</a>					
NPWS,	2022.	<i>Boyne Coast and Estuary</i>		SAC.	[Online]
Available at: <a href="https://npws.fusio.dev/protected-sites/sac/001957">https://npws.fusio.dev/protected-sites/sac/001957</a>					
NPWS,	2022.	<i>Boyne Estuary</i>		SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004080">https://www.npws.ie/protected-sites/spa/004080</a>					

NPWS,	2022.	<i>Bray</i>	<i>Head</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000714">https://www.npws.ie/protected-sites/sac/000714</a>						
NPWS,	2022.	<i>Bricklieve Mountains</i>	<i>and</i>	<i>Keishcorran</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/001656">https://www.npws.ie/protected-sites/sac/001656</a>						
NPWS,	2022.	<i>Brown</i>	<i>Bog</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002346">https://www.npws.ie/protected-sites/sac/002346</a>						
NPWS,	2022.	<i>Buckronev-Brittis</i>	<i>Dunes</i>	<i>and</i>	<i>Fen</i>	SAC.
Available at: <a href="https://www.npws.ie/protected-sites/sac/000729">https://www.npws.ie/protected-sites/sac/000729</a>						
NPWS,	2022.	<i>Bunduff Lough</i>	<i>and</i>	<i>Machair/Trawalua/Mullaghmore</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000625">https://www.npws.ie/protected-sites/sac/000625</a>						
NPWS,	2022.	<i>Caherglassaun</i>	<i>Turlough</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000238">https://www.npws.ie/protected-sites/sac/000238</a>						
NPWS,	2022.	<i>Carlingford</i>	<i>Lough</i>		SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004078">https://www.npws.ie/protected-sites/spa/004078</a>						
NPWS,	2022.	<i>Carlingford</i>	<i>Mountain</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000453">https://www.npws.ie/protected-sites/sac/000453</a>						
NPWS,	2022.	<i>Carlingford</i>	<i>Shore</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002306">https://www.npws.ie/protected-sites/sac/002306</a>						
NPWS,	2022.	<i>Carn Park</i>	<i>Bog</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002336">https://www.npws.ie/protected-sites/sac/002336</a>						
NPWS,	2022.	<i>Carnsore</i>	<i>Point</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002269">https://www.npws.ie/protected-sites/sac/002269</a>						
NPWS,	2022.	<i>Castlemaine</i>	<i>Harbour</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000343">https://www.npws.ie/protected-sites/sac/000343</a>						
NPWS,	2022.	<i>Charleville</i>	<i>Wood</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000571">https://www.npws.ie/protected-sites/sac/000571</a>						
NPWS,	2022.	<i>Clare</i>	<i>Glen</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000930">https://www.npws.ie/protected-sites/sac/000930</a>						
NPWS,	2022.	<i>Clew Bay</i>	<i>Complex</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/001482">https://www.npws.ie/protected-sites/sac/001482</a>						
NPWS,	2022.	<i>Clogher</i>	<i>Head</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/001459">https://www.npws.ie/protected-sites/sac/001459</a>						
NPWS,	2022.	<i>Cloonchambers</i>	<i>Bog</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000600">https://www.npws.ie/protected-sites/sac/000600</a>						
NPWS,	2022.	<i>Clooneen</i>	<i>Bog</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002348">https://www.npws.ie/protected-sites/sac/002348</a>						
NPWS,	2022.	<i>Coole-Garryland</i>	<i>Complex</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000252">https://www.npws.ie/protected-sites/sac/000252</a>						
NPWS,	2022.	<i>Coole-Garryland</i>			SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004107">https://www.npws.ie/protected-sites/spa/004107</a>						

NPWS, Available at: <a href="https://www.npws.ie/protected-sites/spa/004030">https://www.npws.ie/protected-sites/spa/004030</a>	2022.	<i>Cork</i>	<i>Harbour</i>	<i>SPA.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/002110">https://www.npws.ie/protected-sites/sac/002110</a>	2022.	<i>Corliskea/Trien/Cloonfelliv</i>	<i>Bog</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/000979">https://www.npws.ie/protected-sites/sac/000979</a>	2022.	<i>Corratirrim</i>		<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/spa/004142">https://www.npws.ie/protected-sites/spa/004142</a>	2022.	<i>Cregganna</i>	<i>Marsh</i>	<i>SPA.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/000129">https://www.npws.ie/protected-sites/sac/000129</a>	2022.	<i>Croaghonagh</i>	<i>Bog</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/002337">https://www.npws.ie/protected-sites/sac/002337</a>	2022.	<i>Crosswood</i>	<i>Bog</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/spa/004035">https://www.npws.ie/protected-sites/spa/004035</a>	2022.	<i>Cummeen</i>	<i>Strand</i>	<i>SPA.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/000627">https://www.npws.ie/protected-sites/sac/000627</a>	2022.	<i>Cummeen Strand/Drumcliff</i>	<i>Bay (Sligo Bay)</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/spa/004172">https://www.npws.ie/protected-sites/spa/004172</a>	2022.	<i>Dalkey</i>	<i>Islands</i>	<i>SPA.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/000133">https://www.npws.ie/protected-sites/sac/000133</a>	2022.	<i>Donegal Bay</i>	<i>(Murvagh)</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/spa/004151">https://www.npws.ie/protected-sites/spa/004151</a>	2022.	<i>Donegal</i>	<i>Bay</i>	<i>SPA.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/000032">https://www.npws.ie/protected-sites/sac/000032</a>	2022.	<i>Dromore Woods</i>	<i>and Loughs</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/spa/004013">https://www.npws.ie/protected-sites/spa/004013</a>	2022.	<i>Drumcliff</i>	<i>Bay</i>	<i>SPA.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/000455">https://www.npws.ie/protected-sites/sac/000455</a>	2022.	<i>Dundalk</i>	<i>Bay</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/spa/004026">https://www.npws.ie/protected-sites/spa/004026</a>	2022.	<i>Dundalk</i>	<i>Bay</i>	<i>SPA.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/spa/004032">https://www.npws.ie/protected-sites/spa/004032</a>	2022.	<i>Dungarvan</i>	<i>Harbour</i>	<i>SPA.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/002303">https://www.npws.ie/protected-sites/sac/002303</a>	2022.	<i>Dunmuckrum</i>	<i>Turloughs</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/000138">https://www.npws.ie/protected-sites/sac/000138</a>	2022.	<i>Durnesh</i>	<i>Lough</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/001926">https://www.npws.ie/protected-sites/sac/001926</a>	2022.	<i>East Burren</i>	<i>Complex</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/000576">https://www.npws.ie/protected-sites/sac/000576</a>	2022.	<i>Fin Lough</i>	<i>(Offaly)</i>	<i>SAC.</i>	[Online]

NPWS,	2022.	<i>Galway Bay</i>	<i>Complex</i>	<i>SAC.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000268">https://www.npws.ie/protected-sites/sac/000268</a>					
NPWS,	2022.	<i>Glendine</i>	<i>Wood</i>	<i>SAC.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002324">https://www.npws.ie/protected-sites/sac/002324</a>					
NPWS,	2022.	<i>Glenloughaun</i>	<i>Esker</i>	<i>SAC.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002213">https://www.npws.ie/protected-sites/sac/002213</a>					
NPWS,	2022.	<i>Great Island</i>	<i>Channel</i>	<i>SAC.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/001058">https://www.npws.ie/protected-sites/sac/001058</a>					
NPWS,	2022.	<i>Inner Galway</i>	<i>Bay</i>	<i>SPA.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004031">https://www.npws.ie/protected-sites/spa/004031</a>					
NPWS,	2022.	<i>Kilcarren-Firville</i>	<i>Bog</i>	<i>SAC.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000647">https://www.npws.ie/protected-sites/sac/000647</a>					
NPWS,	2022.	<i>Killala Bay/Moy</i>	<i>Estuary</i>	<i>SAC.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000458">https://www.npws.ie/protected-sites/sac/000458</a>					
NPWS,	2022.	<i>Killarney National</i>	<i>Park</i>	<i>SPA.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004038">https://www.npws.ie/protected-sites/spa/004038</a>					
NPWS,	2022.	<i>Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment</i>		<i>SAC.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000365">https://www.npws.ie/protected-sites/sac/000365</a>					
NPWS,	2022.	<i>Killyconny Bog</i>	<i>(Cloghbally)</i>	<i>SAC.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000006">https://www.npws.ie/protected-sites/sac/000006</a>					
NPWS,	2022.	<i>Kilroosky Lough</i>	<i>Cluster</i>	<i>SAC.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/001786">https://www.npws.ie/protected-sites/sac/001786</a>					
NPWS,	2022.	<i>Lisbigney</i>	<i>Bog</i>	<i>SAC.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000869">https://www.npws.ie/protected-sites/sac/000869</a>					
NPWS,	2022.	<i>Lough</i>	<i>Arrow</i>	<i>SAC.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/001673">https://www.npws.ie/protected-sites/sac/001673</a>					
NPWS,	2022.	<i>Lough</i>	<i>Arrow</i>	<i>SPA.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004050">https://www.npws.ie/protected-sites/spa/004050</a>					
NPWS,	2022.	<i>Lough Conn and</i>	<i>Lough Cullin</i>	<i>SPA.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004228">https://www.npws.ie/protected-sites/spa/004228</a>					
NPWS,	2022.	<i>Lough</i>	<i>Corrib</i>	<i>SAC.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000297">https://www.npws.ie/protected-sites/sac/000297</a>					
NPWS,	2022.	<i>Lough Derg</i>	<i>(Shannon)</i>	<i>SPA.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004058">https://www.npws.ie/protected-sites/spa/004058</a>					
NPWS,	2022.	<i>Lough Derg, North-east</i>	<i>Shore</i>	<i>SAC.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002241">https://www.npws.ie/protected-sites/sac/002241</a>					
NPWS,	2022.	<i>Lough</i>	<i>Ennell</i>	<i>SAC.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000685">https://www.npws.ie/protected-sites/sac/000685</a>					
NPWS,	2022.	<i>Lough</i>	<i>Ennell</i>	<i>SPA.</i>	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004044">https://www.npws.ie/protected-sites/spa/004044</a>					

NPWS, 2022. <i>Lough Eske and Ardnamona Wood</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000163">https://www.npws.ie/protected-sites/sac/000163</a>		
NPWS, 2022. <i>Lough Fingall Complex</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000606">https://www.npws.ie/protected-sites/sac/000606</a>		
NPWS, 2022. <i>Lough Forbes Complex</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/001818">https://www.npws.ie/protected-sites/sac/001818</a>		
NPWS, 2022. <i>Lough Gash Turlough</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000051">https://www.npws.ie/protected-sites/sac/000051</a>		
NPWS, 2022. <i>Lough Gill</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/001976">https://www.npws.ie/protected-sites/sac/001976</a>		
NPWS, 2022. <i>Lough Hoe Bog</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000633">https://www.npws.ie/protected-sites/sac/000633</a>		
NPWS, 2022. <i>Lough Melvin</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000428">https://www.npws.ie/protected-sites/sac/000428</a>		
NPWS, 2022. <i>Lough Nabrickkeagh Bog</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000634">https://www.npws.ie/protected-sites/sac/000634</a>		
NPWS, 2022. <i>Lough Oughter and Associated Loughs</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000007">https://www.npws.ie/protected-sites/sac/000007</a>		
NPWS, 2022. <i>Lough Oughter Complex</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004049">https://www.npws.ie/protected-sites/spa/004049</a>		
NPWS, 2022. <i>Lough Rea</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000304">https://www.npws.ie/protected-sites/sac/000304</a>		
NPWS, 2022. <i>Lough Rea</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004134">https://www.npws.ie/protected-sites/spa/004134</a>		
NPWS, 2022. <i>Lough Ree</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000440">https://www.npws.ie/protected-sites/sac/000440</a>		
NPWS, 2022. <i>Lough Ree</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004064">https://www.npws.ie/protected-sites/spa/004064</a>		
NPWS, 2022. <i>Lough Swilly</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002287">https://www.npws.ie/protected-sites/sac/002287</a>		
NPWS, 2022. <i>Lough Swilly</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004075">https://www.npws.ie/protected-sites/spa/004075</a>		
NPWS, 2022. <i>Lower River Shannon</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002165">https://www.npws.ie/protected-sites/sac/002165</a>		
NPWS, 2022. <i>Lower River Suir</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002137">https://www.npws.ie/protected-sites/sac/002137</a>		
NPWS, 2022. <i>Malahide Estuary</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000205">https://www.npws.ie/protected-sites/sac/000205</a>		
NPWS, 2022. <i>Malahide Estuary</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004025">https://www.npws.ie/protected-sites/spa/004025</a>		



NPWS, Available at: <a href="https://www.npws.ie/protected-sites/spa/004096">https://www.npws.ie/protected-sites/spa/004096</a>	2022.	<i>Middle Shannon</i>	<i>Callows</i>	<i>SPA.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/spa/004193">https://www.npws.ie/protected-sites/spa/004193</a>	2022.	<i>Mid-Waterford</i>	<i>Coast</i>	<i>SPA.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/002351">https://www.npws.ie/protected-sites/sac/002351</a>	2022.	<i>Moanveanlagh</i>	<i>Bog</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/000580">https://www.npws.ie/protected-sites/sac/000580</a>	2022.	<i>Mongan</i>	<i>Bog</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/spa/004017">https://www.npws.ie/protected-sites/spa/004017</a>	2022.	<i>Mongan</i>	<i>Bog</i>	<i>SPA.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/002342">https://www.npws.ie/protected-sites/sac/002342</a>	2022.	<i>Mount Hevey</i>	<i>Bog</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/002202">https://www.npws.ie/protected-sites/sac/002202</a>	2022.	<i>Mount Jessop</i>	<i>Bog</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/000581">https://www.npws.ie/protected-sites/sac/000581</a>	2022.	<i>Moyclare</i>	<i>Bog</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/000057">https://www.npws.ie/protected-sites/sac/000057</a>	2022.	<i>Moyree River</i>	<i>System</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/spa/004162">https://www.npws.ie/protected-sites/spa/004162</a>	2022.	<i>Mullaghanish to Musheramore</i>	<i>Mountains</i>	<i>SPA.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/002091">https://www.npws.ie/protected-sites/sac/002091</a>	2022.	<i>Newhall and Edenvale</i>	<i>Complex</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/002245">https://www.npws.ie/protected-sites/sac/002245</a>	2022.	<i>Old Farm Buildings,</i>	<i>Ballymacrogan</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/002006">https://www.npws.ie/protected-sites/sac/002006</a>	2022.	<i>Ox Mountains</i>	<i>Bogs</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/001776">https://www.npws.ie/protected-sites/sac/001776</a>	2022.	<i>Pilgrim's Road</i>	<i>Esker</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/000396">https://www.npws.ie/protected-sites/sac/000396</a>	2022.	<i>Pollardstown</i>	<i>Fen</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/spa/004063">https://www.npws.ie/protected-sites/spa/004063</a>	2022.	<i>Poulaphouca</i>	<i>Reservoir</i>	<i>SPA.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/000322">https://www.npws.ie/protected-sites/sac/000322</a>	2022.	<i>Rahasane</i>	<i>Turlough</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/spa/004089">https://www.npws.ie/protected-sites/spa/004089</a>	2022.	<i>Rahasane</i>	<i>Turlough</i>	<i>SPA.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/000397">https://www.npws.ie/protected-sites/sac/000397</a>	2022.	<i>Red Bog,</i>	<i>Kildare</i>	<i>SAC.</i>	[Online]
NPWS, Available at: <a href="https://www.npws.ie/protected-sites/sac/002353">https://www.npws.ie/protected-sites/sac/002353</a>	2022.	<i>Redwood</i>	<i>Bog</i>	<i>SAC.</i>	[Online]

NPWS,	2022.	<i>River Barrow and River Nore</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002162">https://www.npws.ie/protected-sites/sac/002162</a>				
NPWS,	2022.	<i>River Boyne and River Blackwater</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002299">https://www.npws.ie/protected-sites/sac/002299</a>				
NPWS,	2022.	<i>River Boyne and River Blackwater</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004232">https://www.npws.ie/protected-sites/spa/004232</a>				
NPWS,	2022.	<i>River Finn</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002301">https://www.npws.ie/protected-sites/sac/002301</a>				
NPWS,	2022.	<i>River Little Brosna Callows</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004086">https://www.npws.ie/protected-sites/spa/004086</a>				
NPWS,	2022.	<i>River Moy</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002298">https://www.npws.ie/protected-sites/sac/002298</a>				
NPWS,	2022.	<i>River Nanny Estuary and Shore</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004158">https://www.npws.ie/protected-sites/spa/004158</a>				
NPWS,	2022.	<i>River Nore</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004233">https://www.npws.ie/protected-sites/spa/004233</a>				
NPWS,	2022.	<i>River Shannon and River Fergus Estuaries</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004077">https://www.npws.ie/protected-sites/spa/004077</a>				
NPWS,	2022.	<i>River Shannon Callows</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000216">https://www.npws.ie/protected-sites/sac/000216</a>				
NPWS,	2022.	<i>River Suck Callows</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004097">https://www.npws.ie/protected-sites/spa/004097</a>				
NPWS,	2022.	<i>Rockabill</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004014">https://www.npws.ie/protected-sites/spa/004014</a>				
NPWS,	2022.	<i>Rockabill to Dalkey Island</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/003000">https://www.npws.ie/protected-sites/sac/003000</a>				
NPWS,	2022.	<i>Rogerstown Estuary</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000208">https://www.npws.ie/protected-sites/sac/000208</a>				
NPWS,	2022.	<i>Rogerstown Estuary</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004015">https://www.npws.ie/protected-sites/spa/004015</a>				
NPWS,	2022.	<i>Rye Water Valley/Cartron</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/001398">https://www.npws.ie/protected-sites/sac/001398</a>				
NPWS,	2022.	<i>Sheheree (Ardagh) Bog</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000382">https://www.npws.ie/protected-sites/sac/000382</a>				
NPWS,	2022.	<i>Skerries Islands</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004122">https://www.npws.ie/protected-sites/spa/004122</a>				
NPWS,	2022.	<i>Slaney River Valley</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000781">https://www.npws.ie/protected-sites/sac/000781</a>				
NPWS,	2022.	<i>Slaney River Valley</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000781">https://www.npws.ie/protected-sites/sac/000781</a>				

NPWS,	2022.	<i>Slieve Bloom</i>	<i>Mountains</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000412">https://www.npws.ie/protected-sites/sac/000412</a>					
NPWS,	2022.	<i>Slieve Bloom</i>	<i>Mountains</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004160">https://www.npws.ie/protected-sites/spa/004160</a>					
NPWS,	2022.	<i>Slieve Mish</i>	<i>Mountains</i>	SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002185">https://www.npws.ie/protected-sites/sac/002185</a>					
NPWS,	2022.	<i>Slievefelim to Silvermines</i>	<i>Mountains</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004165">https://www.npws.ie/protected-sites/spa/004165</a>					
NPWS,	2022.	<i>Sligo/Leitrim</i>	<i>Uplands</i>	SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004187">https://www.npws.ie/protected-sites/spa/004187</a>					
NPWS,	2022.	<i>South Dublin Bay and River Tolka Estuary</i>		SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004024">https://www.npws.ie/protected-sites/spa/004024</a>					
NPWS,	2022.	<i>South Dublin Bay</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000210">https://www.npws.ie/protected-sites/sac/000210</a>					
NPWS,	2022.	<i>Spahill and Clomantagh Hill</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000849">https://www.npws.ie/protected-sites/sac/000849</a>					
NPWS,	2022.	<i>Split Hills and Long Hill Esker</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/001831">https://www.npws.ie/protected-sites/sac/001831</a>					
NPWS,	2022.	<i>St. Gobnet's Wood</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000106">https://www.npws.ie/protected-sites/sac/000106</a>					
NPWS,	2022.	<i>Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle</i>		SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004161">https://www.npws.ie/protected-sites/spa/004161</a>					
NPWS,	2022.	<i>Streedagh Point Dunes</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/001680">https://www.npws.ie/protected-sites/sac/001680</a>					
NPWS,	2022.	<i>Termon Lough</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/001321">https://www.npws.ie/protected-sites/sac/001321</a>					
NPWS,	2022.	<i>The Gearagh</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000108">https://www.npws.ie/protected-sites/sac/000108</a>					
NPWS,	2022.	<i>The Gearagh</i>		SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004109">https://www.npws.ie/protected-sites/spa/004109</a>					
NPWS,	2022.	<i>The Long Derries, Edenderry</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000925">https://www.npws.ie/protected-sites/sac/000925</a>					
NPWS,	2022.	<i>The Loughans</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000407">https://www.npws.ie/protected-sites/sac/000407</a>					
NPWS,	2022.	<i>The Murrough</i>		SPA.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/spa/004186">https://www.npws.ie/protected-sites/spa/004186</a>					
NPWS,	2022.	<i>The Murrough Wetlands</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/002249">https://www.npws.ie/protected-sites/sac/002249</a>					
NPWS,	2022.	<i>Tory Hill</i>		SAC.	[Online]
Available at: <a href="https://www.npws.ie/protected-sites/sac/000439">https://www.npws.ie/protected-sites/sac/000439</a>					

NPWS, 2022. *Tralee Bay and Magharees Peninsula, West to Cloghane* SAC. [Online]  
Available at: <https://www.npws.ie/protected-sites/sac/002070>

NPWS, 2022. *Tralee Bay Complex* SPA. [Online]  
Available at: <https://www.npws.ie/protected-sites/spa/004188>

NPWS, 2022. *Tramore Back Strand* SPA. [Online]  
Available at: <https://www.npws.ie/protected-sites/spa/004027>

NPWS, 2022. *Tramore Dunes and Backstrand* SAC. [Online]  
Available at: <https://www.npws.ie/protected-sites/sac/000671>

NPWS, 2022. *Union Wood* SAC. [Online]  
Available at: <https://www.npws.ie/protected-sites/sac/000638>

NPWS, 2022. *Unshin River* SAC. [Online]  
Available at: <https://www.npws.ie/protected-sites/sac/001898>

NPWS, 2022. *Wexford Harbour and Slob* SPA. [Online]  
Available at: <https://www.npws.ie/protected-sites/spa/004076>

NPWS, 2022. *Wicklow Head* SPA. [Online]  
Available at: <https://www.npws.ie/protected-sites/spa/004127>

NPWS, 2022. *Wooddown Bog* SAC. [Online]  
Available at: <https://www.npws.ie/protected-sites/sac/002205>

Offaly County Council, 2021. *Offaly County Development Plan 2021 - 2027*. [Online]  
Available at: <https://www.offaly.ie/eng/Services/Planning/County-Development-Plan-2021-2027/Stage-4-Final-Plan/Final-Plan.html>  
[Accessed 27 May 2022].

Office of the Attorney General, 1977. *Local Government (Water Pollution) Act*. [Online]  
Available at: <https://www.irishstatutebook.ie/eli/1977/act/1/enacted/en/print.html>  
[Accessed 26 May 2022].

Office of the Attorney General, 1990. *Local Government (Water Pollution) (Amendment) Act*. [Online]  
Available at: <https://www.irishstatutebook.ie/eli/1990/act/21/enacted/en/print>  
[Accessed 26 May 2022].

Office of the Attorney General, 2010. *S.I. No. 212/2010 - European Communities (Conservation of Wild Birds (South Dublin Bay and River Tolka Estuary Special Protection Area 004024)) Regulations 2010..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2010/si/212/made/en/print>

Office of the Attorney General, 2010. *S.I. No. 236/2010 - European Communities (Conservation of Wild Birds (Coole-Garryland Special Protection Area 004107)) Regulations 2010..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2010/si/236/made/en/print>

Office of the Attorney General, 2010. *S.I. No. 238/2010 - European Communities (Conservation of Wild Birds (Dalkey Islands Special Protection Area 004172)) Regulations 2010..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2010/si/238/made/en/print>

Office of the Attorney General, 2010. *S.I. No. 245/2010 - European Communities (Conservation of Wild Birds (Skerries Islands Special Protection Area 004122)) Regulations 2010..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2010/si/245/made/en/print>

Office of the Attorney General, 2010. *S.I. No. 271/2010 - European Communities (Conservation of Wild Birds (Rogerstown Estuary Special Protection Area 004015)) Regulations 2010..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2010/si/271/made/en/print>

Office of the Attorney General, 2010. *S.I. No. 72/2010 - European Communities (Conservation of Wild Birds (Lough Rea Special Protection Area 004134)) Regulations 2010..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2010/si/72/made/en/print>

Office of the Attorney General, 2010. *S.I. No. 73/2010 - European Communities (Conservation of Wild Birds (Poulaphouca Reservoir Special Protection Area 004063)) Regulations 2010..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2010/si/73/made/en/print>

Office of the Attorney General, 2010. *S.I. No. 75/2010 - European Communities (Conservation of Wild Birds (Sligo/Leitrim Uplands Special Protection Area 004187)) Regulations 2010..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2010/si/75/made/en/print>

Office of the Attorney General, 2011. *S.I. No. 285/2011 - European Communities (Conservation of Wild Birds (Malahide Estuary Special Protection Area 004025)) Regulations 2011..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2011/si/285/made/en/print>

Office of the Attorney General, 2011. *S.I. No. 286/2011 - European Communities (Conservation of Wild Birds (Tramore Back Strand Special Protection Area 004027)) Regulations 2011..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2011/si/286/made/en/print>

Office of the Attorney General, 2011. *S.I. No. 289/2011 - European Communities (Conservation of Wild Birds (Lough Arrow Special Protection Area 004050)) Regulations 2011..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2011/si/289/made/en/print>

Office of the Attorney General, 2011. *S.I. No. 295/2011 - European Communities (Conservation of Wild Birds (Donegal Bay Special Protection Area 004151)) Regulations 2011..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2011/si/295/made/en/print>

Office of the Attorney general, 2011. *S.I. No. 298/2011 - European Communities (Conservation of Wild Birds (The Murrough Special Protection Area 004186)) Regulations 2011..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2011/si/298/made/en/print>

Office of the Attorney General, 2011. *S.I. No. 376/2011 - European Communities (Conservation of Wild Birds (Cummeen Strand Special Protection Area 004035)) Regulations 2011..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2011/si/376/made/en/print>

Office of the Attorney General, 2011. *S.I. No. 558/2011 - European Communities (Conservation of Wild Birds (Mid-Waterford Coast Special Protection Area 004193)) Regulations 2011..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2011/si/558/made/en/print>

Office of the Attorney General, 2011. *S.I. No. 587/2011 - European Communities (Conservation of Wild Birds (Slievefelim to Silvermines Mountains Special Protection Area 004165)) Regulations 2011..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2011/si/587/made/en/print>

Office of the Attorney General, 2011. *S.I. No. 590/2011 - European Communities (Conservation of Wild Birds Lough Conn and Lough Cullin Special Protection Area 004228)) Regulations 2011..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2011/si/590/made/en/print>

Office of the Attorney General, 2011. *S.I. No. 618/2011 - European Communities (Conservation of Wild Birds (Lough Ennell Special Protection Area 004044)) Regulations 2011..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2011/si/618/made/en/print>

Office of the Attorney General, 2011. *S.I. No. 626/2011 - European Communities (Conservation of Wild Birds (Boyne Estuary Special Protection Area 004080)) Regulations 2011..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2011/si/626/made/en/print>

Office of the Attorney General, 2011. *S.I. No. 627/2011 - European Communities (Conservation of Wild Birds (Mullaghanish to Musheramore Mountains Special Protection Area 004162)) Regulations 2011..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2011/si/627/made/en/print>

Office of the Attorney General, 2011. *S.I. No. 652/2011 - European Communities (Conservation of Wild Birds (River Little Brosna Callows Special Protection Area 004086)) Regulations 2011..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2011/si/652/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 140/2012 - European Communities (Conservation of Wild Birds (River Nanny Estuary and Shore SPA 004158)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/140/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 184/2012 - European Communities (Conservation of Wild Birds (Slieve Bloom Mountains Special Protection Area 004160)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/184/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 191/2012 - European Communities (Conservation of Wild Birds (Blackwater Callows Special Protection Area 004094)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/191/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 193/2012 - European Communities (Conservation of Wild Birds (River Nore Special Protection Area 004233)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/193/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 194/2012 - European Communities (Conservation of Wild Birds (Wexford Harbour and Slobs Special Protection Area 004076)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/194/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 310/2012 - European Communities (Conservation of Wild Birds (Dundalk Bay Special Protection Area 004026)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/310/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 311/2012 - European Communities (Conservation of Wild Birds (Rahasane Turlough Special Protection Area 004089)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/311/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 397/2012 - European Communities (Conservation of Wild Birds (River Suck Callows Special Protection Area 004097)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/397/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 40/2012 - European Communities (Conservation of Wild Birds (Drumcliff Bay Special Protection Area 004013)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/40/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 41/2012 - European Communities (Conservation of Wild Birds (Middle Shannon Callows Special Protection Area 004096)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/41/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 456/2012 - European Communities (Conservation of Wild Birds (Lough Ree Special Protection Area 004064)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/456/made/en>

Office of the Attorney General, 2012. *S.I. No. 462/2012 - European Communities (Conservation of Wild Birds (River Boyne and River Blackwater Special Protection Area 004232)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/462/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 464/2012 - European Communities (Conservation of Wild Birds (Carlingford Lough Special Protection Area 004078)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/464/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 585/2012 - European Communities (Conservation of Wild Birds (Lough Oughter Complex Special Protection Area 004049)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/585/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 590/2012 - European Communities (Conservation of Wild Birds (Blackwater Estuary Special Protection Area 004028)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/590/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 591/2012 - European Communities (Conservation of Wild Birds (Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area 004161)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/591/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 592/2012 - European Communities (Conservation of Wild Birds (Lough Swilly Special Protection Area 004075)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/592/made/en/print>

Office of the Attorney General, 2012. *S.I. No. 94/2012 - European Communities (Conservation of Wild Birds (Rockabill Special Protection Area 004014)) Regulations 2012..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2012/si/94/made/en>

Office of the Attorney General, 2016. *S.I. No. 178/2016 - European Union Habitats (Lisbigney Bog Special Area of Conservation 000869) Regulations 2016..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2016/si/178/made/en>

Office of the Attorney General, 2016. *S.I. No. 191/2016 - European Union Habitats (The Loughans Special Area of Conservation 000407) Regulations 2016..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2016/si/191/made/en>

Office of the Attorney General, 2016. *S.I. No. 197/2016 - European Union Habitats (Ballyseedy Wood Special Area of Conservation 002112) Regulations 2016..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2016/si/197/made/en>

Office of the Attorney General, 2016. *S.I. No. 200/2016 - European Union Habitats (Glendine Wood Special Area of Conservation 002324) Regulations 2016..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2016/si/200/made/en>

Office of the Attorney General, 2016. *S.I. No. 249/2016 - European Union Habitats (Glenloughaun Esker Special Area of Conservation 002213) Regulations 2016..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2016/si/249/made/en>

Office of the Attorney General, 2016. *S.I. No. 256/2016 - European Union Habitats (Ballintra Special Area of Conservation 000115) Regulations 2016..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2016/si/256/made/en>

Office of the Attorney General, 2016. *S.I. No. 265/2016 - European Union Habitats (Kilroosky Lough Cluster Special Area of Conservation 001786) Regulations 2016..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2016/si/265/made/en>

Office of the Attorney General, 2016. *S.I. No. 294/2016 - European Union Habitats (St. Gobnets Wood Special Area of Conservation 000106) Regulations 2016..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2016/si/294/made/en>

Office of the Attorney General, 2016. *S.I. No. 297/2016 - European Union Habitats (Tory Hill Special Area of Conservation 000439) Regulations 2016..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2016/si/297/made/en>

Office of the Attorney General, 2016. *S.I. No. 298/2016 - European Union Habitats (Clare Glen Special Area of Conservation 000930) Regulations 2016..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2016/si/298/made/en>

Office of the Attorney General, 2016. *S.I. No. 528/2016 - European Union Habitats (The Long Derries, Edenderry Special Area of Conservation 000925) Regulations 2016..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2016/si/528/made/en>

Office of the Attorney General, 2016. *S.I. No. 530/2016 - European Union Habitats (Carnsore Point Special Area of Conservation 002269) Regulations 2016..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2016/si/530/made/en>

Office of the Attorney General, 2016. *S.I. No. 648/2016 - European Union Habitats (Carn Park Bog Special Area of Conservation 002336) Regulations 2016..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2016/si/648/made/en>

Office of the Attorney General, 2016. *S.I. No. 92/2016 - European Union Habitats (Old Farm Buildings, Ballymacrogan Special Area of Conservation 002245) Regulations 2016..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2016/si/92/made/en>

Office of the Attorney General, 2017. *S.I. No. 141/2017 - European Union Habitats (Ballynafagh Bog Special Area of Conservation 000391) Regulations 2017..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2017/si/141/made/en>

Office of the Attorney General, 2017. *S.I. No. 223/2017 - European Union Habitats (Fin Lough (Offaly) Special Area of Conservation 000576) Regulations 2017..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2017/si/223/made/en>

Office of the Attorney General, 2017. *S.I. No. 224/2017 - European Union Habitats (Moyclare Bog Special Area of Conservation 000581) Regulations 2017..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2017/si/224/made/en>

Office of the Attorney General, 2017. *S.I. No. 227/2017 - European Union Habitats (Union Wood Special Area of Conservation 000638) Regulations 2017..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2017/si/227/made/en>

Office of the Attorney General, 2017. *S.I. No. 284/2017 - European Union Habitats (Newhall and Edenvale Complex Special Area of Conservation 002091) Regulations 2017..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2017/si/284/made/en>

Office of the Attorney General, 2017. *S.I. No. 447/2017 - European Union Habitats (Lough Rea Special Area of Conservation 000304) Regulations 2017..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2017/si/447/made/en>

Office of the Attorney General, 2017. *S.I. No. 448/2017 - European Union Habitats (Mongan Bog Special Area of Conservation 000580) Regulations 2017..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2017/si/448/made/en>

Office of the Attorney General, 2017. *S.I. No. 452/2017 - European Union Habitats (Lough Forbes Complex Special Area of Conservation 001818) Regulations 2017..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2017/si/452/made/en>

Office of the Attorney General, 2017. *S.I. No. 503/2017 - European Union Habitats (Rahasane Turlough Special Area of Conservation 000322) Regulations 2017..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2017/si/503/made/en>

Office of the Attorney General, 2017. *S.I. No. 612/2017 - European Union Habitats (Ballymacoda (Clonpriest and Pillmore) Special Area of Conservation 000077) Regulations 2017..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2017/si/612/made/en>

Office of the Attorney General, 2017. *S.I. No. 617/2017 - European Union Habitats (Askeaton Fen Complex Special Area of Conservation 002279) Regulations 2017..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2017/si/617/made/en>

Office of the Attorney General, 2017. *S.I. No. 620/2017 - European Union Habitats (Bray Head Special Area of Conservation 000714) Regulations 2017..* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2017/si/620/made/en>



Office of the Attorney General, 2017. *S.I. No. 621/2017 - European Union Habitats (Mount Hevey Bog Special Area of Conservation 002342) Regulations 2017.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2017/si/621/made/en>

Office of the Attorney General, 2017. *S.I. No. 622/2017 - European Union Habitats (The Murrough Wetlands Special Area of Conservation 002249) Regulations 2017.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2017/si/622/made/en>

Office of the Attorney General, 2018. *S.I. No. 284/2018 - European Union Habitats (Killyconny Bog (Cloghbally) Special Area of Conservation 000006) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/284/made/en>

Office of the Attorney General, 2018. *S.I. No. 286/2018 - European Union Habitats (Rogerstown Estuary Special Area of Conservation 000208) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/286/made/en>

Office of the Attorney General, 2018. *S.I. No. 288/2018 - European Union Habitats (Brown Bog Special Area of Conservation 002346) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/288/made/en>

Office of the Attorney General, 2018. *S.I. No. 289/2018 - European Union Habitats (Carlingford Shore Special Area of Conservation 002306) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/289/made/en>

Office of the Attorney General, 2018. *S.I. No. 415/2018 - European Union Habitats (Durnesh Lough Special Area of Conservation 000138) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/415/made/en>

Office of the Attorney General, 2018. *S.I. No. 418/2018 - European Union Habitats (Lough Swilly Special Area of Conservation 002287) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/418/made/en>

Office of the Attorney General, 2018. *S.I. No. 493/2018 - European Union Habitats (Ballynafagh Lake Special Area of Conservation 001387) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/493/made/en>

Office of the Attorney General, 2018. *S.I. No. 494/2018 - European Union Habitats (Rye Water Valley/Cartron Special Area of Conservation 001398) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/494/made/en>

Office of the Attorney General, 2018. *S.I. No. 496/2018 - European Union Habitats (Balla Turlough Special Area of Conservation 000463) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/496/made/en>

Office of the Attorney General, 2018. *S.I. No. 541/2018 - European Union Habitats (Lough Eske and Ardnamona Wood Special Area of Conservation 000163) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/541/made/en>

Office of the Attorney General, 2018. *S.I. No. 542/2018 - European Union Habitats (Pollardstown Fen Special Area of Conservation 000396) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/542/made/en>

Office of the Attorney General, 2018. *S.I. No. 545/2018 - European Union Habitats (Lough Arrow Special Area of Conservation 001673) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/545/made/en>

Office of the Attorney General, 2018. *S.I. No. 546/2018 - European Union Habitats (Tramore Dunes and Backstrand Special Area of Conservation 000671) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/546/made/en>

Office of the Attorney General, 2018. *S.I. No. 71/2018 - European Union Habitats (Ballyallia Lake Special Area of Conservation 000014) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/71/made/en>

Office of the Attorney General, 2018. *S.I. No. 72/2018 - European Union Habitats (Lough Gash Turlough Special Area of Conservation 000051) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/72/made/en>

Office of the Attorney General, 2018. *S.I. No. 74/2018 - European Union Habitats (Lough Derg, Northeast Shore Special Area of Conservation 002241) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/74/made/en>

Office of the Attorney General, 2018. *S.I. No. 76/2018 - European Union Habitats (Red Bog, Kildare Special Area of Conservation 000397) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/76/made/en>

Office of the Attorney General, 2018. *S.I. No. 78/2018 - European Union Habitats (Bricklieve Mountains and Keishcorran Special Area of Conservation 001656) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/78/made/en>

Office of the Attorney General, 2018. *S.I. No. 79/2018 - European Union Habitats (Streedagh Point Dunes Special Area of Conservation 001680) Regulations 2018.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2018/si/79/made/en>

Office of the Attorney General, 2019. *S.I. No. 175/2019 - European Union Conservation of Wild Birds (Tralee Bay Complex Special Protection Area 004188) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/175/made/en>

Office of the Attorney General, 2019. *S.I. No. 206/2019 - European Union Habitats (Great Island Channel Special Area of Conservation 001058) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/206/made/en>

Office of the Attorney General, 2019. *S.I. No. 293/2019 - European Union Habitats (Donegal Bay (Murvagh) Special Area Of Conservation 000133) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/293/made/en>

Office of the Attorney General, 2019. *S.I. No. 329/2019 - European Union Conservation Of Wild Birds (River Shannon And River Fergus Estuaries Special Protection Area 004077) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/329/made/en>

Office of the Attorney General, 2019. *S.I. No. 330/2019 - European Union Conservation Of Wild Birds (Dungarvan Harbour Special Protection Area 004032) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/330/made/en>

Office of the Attorney General, 2019. *S.I. No. 331/2019 - European Union Conservation Of Wild Birds (Lough Derg (Shannon) Special Protection Area 004058) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/331/made/en>

Office of the Attorney General, 2019. *S.I. No. 514/2019 - European Union Conservation of Wild Birds (Cregganna Marsh Special Protection Area 004142) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/514/made/en>

Office of the Attorney General, 2019. *S.I. No. 515/2019 - European Union Conservation of Wild Birds (Inner Galway Bay Special Protection Area 004031) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/515/made/en>

Office of the Attorney General, 2019. *S.I. No. 523/2019 - European Union Habitats (The Gearagh Special Area of Conservation 000108) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/523/made/en>

Office of the Attorney General, 2019. *S.I. No. 525/2019 - European Union Habitats (South Dublin Bay Special Area of Conservation 000210) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/525/made/en>

Office of the Attorney General, 2019. *S.I. No. 609/2019 - European Union Habitats (Dundalk Bay Special Area of Conservation 000455) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/609/made/en>

Office of the Attorney General, 2019. *S.I. No. 610/2019 - European Union Habitats (Clogher Head Special Area of Conservation 001459) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/610/made/en>

Office of the Attorney General, 2019. *S.I. No. 651/2019 - European Union Habitats (Moyree River System Special Area of Conservation 000057) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/651/made/en>

Office of the Attorney General, 2019. *S.I. No. 654/2019 - European Union Habitats (Croaghonagh Bog Special Area of Conservation 000129) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/654/made/en>

Office of the Attorney General, 2019. *S.I. No. 658/2019 - European Union Habitats (Charleville Wood Special Area of Conservation 000571) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/658/made/en>

Office of the Attorney General, 2019. *S.I. No. 659/2019 - European Union Habitats (Lough Nabrickkeagh Bog Special Area of Conservation 000634) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/659/made/en>

Office of the Attorney General, 2019. *S.I. No. 660/2019 - European Union Habitats (Split Hills and Long Hill Esker Special Area of Conservation 001831) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/660/made/en>

Office of the Attorney General, 2019. *S.I. No. 90/2019 - European Union Habitats (Blackstairs Mountains Special Area Of Conservation 000770) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/90/made/en>

Office of the Attorney General, 2019. *S.I. No. 91/2019 - European Union Habitats (Malahide Estuary Special Area Of Conservation 000205) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/91/made/en>

Office of the Attorney General, 2019. *S.I. No. 92/2019 - European Union Habitats (Ballyman Glen Special Area Of Conservation 000713) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/92/made/en>

Office of the Attorney General, 2019. *S.I. No. 94/2019 - European Union Habitats (Rockabill To Dalkey Island Special Area Of Conservation 003000) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/94/made/en>

Office of the Attorney General, 2019. *S.I. No. 99/2019 - European Union Habitats (Unshin River Special Area Of Conservation 001898) Regulations 2019.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2019/si/99/made/en>

Office of the Attorney General, 2020. *S.I. No. 114/2020 - European Union Habitats (Dromore Woods and Loughs Special Area of Conservation 000032) Regulations 2020.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2020/si/114/made/en>

Office of the Attorney General, 2020. *S.I. No. 117/2020 - European Union Habitats (Killala Bay/Moy Estuary Special Area of Conservation 000458) Regulations 2020.* [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2020/si/117/made/en>

OPR, 2021. *Appropriate Assessment Screening for Development; OPR Practice Note PN01*, s.l.: Office of the Planning Regulator.

Reijnen, R., Foppen, R., Braak, C. T. & Thissen, J., 1995. The effects of car traffic on breeding bird populations in woodland. III. Reduction of density in relation to the proximity of main roads.. *Applied Ecology*, Volume 23, pp. 187-202.

Riddington, R. et al., 1996. The impact of disturbance on the behaviour and energy budgets of brent geese.. *Bird Study*, Volume 43, pp. 269-279.

Riley, J., 2003. *Review of Recreational Disturbance Research on Selected Wildlife in Scotland*, s.l.: Scottish Natural Heritage.

Roscommon County Council, 2022. *Roscommon County Development Plan 2022 - 2028*. [Online] Available at: <https://www.rosdevplan.ie/stage-3-amendments/stage-3-adoption-of-plan/> [Accessed 27 May 2022].

Scottish Natural Heritage, 2016. *Assessing connectivity with Special Protection Areas (SPA). Guidance Note Version 3*. [Online] Available at: <https://www.nature.scot/doc/assessing-connectivity-special-protection-areas> [Accessed 07 July 2022].

Sligo County Council, 2017. *Sligo County Development Plan 2017 - 2023*. [Online] Available at: [https://www.sligococo.ie/cdp/Volume1\\_MainWrittenStatement.pdf](https://www.sligococo.ie/cdp/Volume1_MainWrittenStatement.pdf) [Accessed 27 May 2022].

South Dublin County Council, 2022. *South Dublin County Development Plan 2022 - 2028*. [Online] Available at: <https://www.sdcc.ie/en/devplan2022/stage-2-draft-plan/chapter-2-core-strategy-and-settlement-strategy/> [Accessed 26 May 2022].

The Stationery Office, 2021. *European Union Conservation Of Wild Birds (Cork Harbour Special Protection Area 004030) Regulations 2021*. [Online] Available at: <https://www.irishstatutebook.ie/eli/2021/si/391/made/en/pdf>

The Stationery Office, 2021. *European Union Habitats (Ballyogan Lough Special Area of Conservation 000019) Regulations 2021*. [Online] Available at: <https://www.irishstatutebook.ie/eli/2021/si/547/made/en/pdf>

The Stationery Office, 2021. *European Union Habitats (Corliskea/Trien/Cloonfelliv Bog Special Area of Conservation 002110) Regulations 2021*. [Online] Available at: <https://www.irishstatutebook.ie/eli/2021/si/654/made/en/pdf>

The Stationery Office, 2021. *European Union Habitats (Corratirrim Special Area of Conservation 000979) Regulations 2021*. [Online] Available at: <https://www.irishstatutebook.ie/eli/2021/si/469/made/en/pdf>

The Stationery Office, 2021. *European Union Habitats (Crosswood Bog Special Area of Conservation 002337) Regulations 2021*. [Online] Available at: <https://www.irishstatutebook.ie/eli/2021/si/767/made/en/pdf>

The Stationery Office, 2021. *European Union Habitats (Galway Bay Complex Special Area of Conservation 000268) Regulations 2021*. [Online] Available at: <https://www.irishstatutebook.ie/eli/2021/si/548/made/en/pdf>

The Stationery Office, 2021. *European Union Habitats (Kilcarren-Firville Bog Special Area of Conservation 000647) Regulations 2021*. [Online] Available at: <https://www.irishstatutebook.ie/eli/2021/si/556/made/en/pdf>

The Stationery Office, 2021. *European Union Habitats (Lough Hoe Bog Special Area of Conservation 000633) Regulations* 2021. [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2021/si/761/made/en/pdf>

The Stationery Office, 2021. *European Union Habitats (Lough Melvin Special Area of Conservation 000428) Regulations* 2021. [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2021/si/520/made/en/pdf>

The Stationery Office, 2021. *European Union Habitats (Ox Mountains Bogs Special Area of Conservation 002006) Regulations* 2021. [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2021/si/552/made/en/pdf>

The Stationery Office, 2021. *European Union Habitats (Redwood Bogs Special Area of Conservation 002353) Regulations* 2021. [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2021/si/657/made/en/pdf>

The Stationery Office, 2021. *European Union Habitats (River Shannon Callows Special Area of Conservation 000216) Regulations* 2021. [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2021/si/473/made/en/pdf>

The Stationery Office, 2021. *European Union Habitats (Slieve Mish Mountains Special Area of Conservation 002185) Regulations* 2021. [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2021/si/352/made/en/pdf>

The Stationery Office, 2021. *European Union Habitats (Spahill and Clomantagh Hill Special Area of Conservation 000849) Regulations* 2021. [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2021/si/346/made/en/pdf>

The Stationery Office, 2021. *European Union Habitats (Tralee Bay and Magharees Peninsula, West to Cloghane Special Area of Conservation 002070) Regulations* 2021. [Online]  
Available at: <https://www.irishstatutebook.ie/eli/2021/si/550/made/en/pdf>

Tipperary County Council, 2022. *Tipperary Council Development Plan 2022 - 2028*. [Online]  
Available at: [https://consultations.tipperarycoco.ie/sites/default/files/2021-07/Volume%201-Written%20Statement\\_0.pdf](https://consultations.tipperarycoco.ie/sites/default/files/2021-07/Volume%201-Written%20Statement_0.pdf)  
[Accessed 27 May 2022].

Tuite, C. H., Owen, M. & Paynter, D., 1983. Interaction between wildfowl and recreation at Llangorse Lake and Talybont Reservoir, South Wales. *Wildfowl*, Volume 34, pp. 48-63.

Underhill et al., 1993. *Use of waterbodies in South West London by Waterfowl. An Investigation of the Factors Affecting Distribution, Abundance and Community Structure.*, Wetland Advisory Service, Slimbridge: Report to Thames Water Utilities Ltd. and Natural England.

Waterford City and County Council, 2022. *Draft Waterford City and County Development Plan 2022 - 2028*. [Online]  
Available at: <https://consult.waterfordcouncil.ie/en/system/files/materials/805/Chapter%207.pdf>  
[Accessed 27 May 2022].

Westmeath County Council, 2021. *Westmeath County Development Plan 2021 - 2028*. [Online]  
Available at: <https://consult.westmeathcoco.ie/en/consultation/draft-westmeath-county-development-plan-2021-2027/chapter/03-housing>  
[Accessed 27 May 2022].

Wexford County Council, 2021. *Wexford County Development Plan 2021 - 2027*. [Online]  
Available at: <https://consult.wexfordcoco.ie/en/consultation/draft-wexford-county-development-plan-2021-2027/chapter/chapter-4-sustainable-housing>  
[Accessed 27 May 2022].

Wicklow County Council & CAAS Ltd, 2016. *Natura Impact Report In Support of the Appropriate Assessment of the Wicklow County Development Plan 2016-2022*. [Online]

Available at: [https://www.wicklow.ie/Portals/0/Documents/Planning/Development-Plans-Strategies/Nat%20Reg%20County%20Plans/Wicklow%20County%20Dev%20Plan/CDP%202016%202022/v3/Volume\\_3\\_-\\_Appendix\\_10\\_-\\_Appropriate\\_Assessment\\_Natura\\_Impact\\_Report\\_and\\_Determination.pdf](https://www.wicklow.ie/Portals/0/Documents/Planning/Development-Plans-Strategies/Nat%20Reg%20County%20Plans/Wicklow%20County%20Dev%20Plan/CDP%202016%202022/v3/Volume_3_-_Appendix_10_-_Appropriate_Assessment_Natura_Impact_Report_and_Determination.pdf)  
[Accessed 31 May 2022].

Wicklow County Council, 2016. *Wicklow County Development Plan 2016 - 2022*. [Online] Available at: [https://www.wicklow.ie/Portals/0/Documents/Planning/Development-Plans-Strategies/Nat%20Reg%20County%20Plans/Wicklow%20County%20Dev%20Plan/Wicklow%20County%20Dev%20Plan%202016%202022/v1/Chapter\\_10\\_-\\_Heritage.pdf](https://www.wicklow.ie/Portals/0/Documents/Planning/Development-Plans-Strategies/Nat%20Reg%20County%20Plans/Wicklow%20County%20Dev%20Plan/Wicklow%20County%20Dev%20Plan%202016%202022/v1/Chapter_10_-_Heritage.pdf)  
[Accessed 31 May 2022].

Wicklow County Council, 2021. *Wicklow County Development Plan 2021 - 2027*. [Online] Available at: <https://consult.wicklow.ie/en/system/files/materials/6/Chapter%203%20Core%20Strategy.pdf>  
[Accessed 27 May 2022].

Wilson, J. P. & Seney, J. P., 1994. Erosional impact of hikers, horses, motorcycles and off-road bicycles on mountain trails in Montana. *Mountain Research and Development*, Volume 14, pp. 77-88.

# Appendix A Background to European sites

**Table 6. Republic of Ireland European sites relevant to the NCN Plan and proposed 4km wide corridors**

European Site	Link to Conservation Objectives	Qualifying Interests	Vulnerabilities to Structure and Function of Site	NCN Corridor Name	County	Reference
Askeaton Fen Complex SAC (002279)	<a href="#">Askeaton Fen Complex SAC Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Calcareous fens with <i>Cladium mariscus</i> and species of the Caricion davallianae</li> <li>• Alkaline fens</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel, or other sediment.</li> <li>• Cutting, uprooting, or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]</li> <li>• Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream,</li> </ul>	• Tralee to Limerick	County Limerick	(NPWS, 2022) (Office of the Attorney General, 2017)



- floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river,

stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or

Balla Turlough SAC (00463)	<a href="#">Balla Turlough SAC Conservation Objectives</a>	• Turloughs	organised activities.	recreational	• Castlebar Longford • Galway Castlebar	to County Mayo to	(NPWS, 2022) (Office of the Attorney General, 2018)
			<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]</li> <li>• Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream,</li> </ul>				

- floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater

- than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
  - Changing of agricultural use from hay meadow to any other use.
  - Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
  - Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Water abstraction, sinking of boreholes and wells.
  - Planting of trees or multi-annual bioenergy crops.
  - Developing or consenting to the development or operation of commercial

			recreational/visitor facilities or organised recreational activities.			
Ballintra SAC (000115)	<a href="#">Ballintra SAC Conservation Objectives</a>	European dry heaths Limestone pavements	<p>Reclamation, including infilling. Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</p> <p>Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</p> <p>Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</p> <p>Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</p> <p>Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]</p> <p>Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]</p>	Letterkenny to Sligo	County Donegal	(NPWS, 2022) (Office of the Attorney General, 2016)

Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

Grazing of livestock between 1st April and 31st October on traditional winterages.

Changing of agricultural use from hay meadow to any other use.

Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.



Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.

Planting of trees or multi-annual bioenergy crops.

Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Ballyallia Lake SAC (000014)	<a href="#">Ballyallia Lake SAC Conservation Objectives</a>	<ul style="list-style-type: none"> <li>Natural lakes with Magnopotamion or Hydrocharition - type vegetation</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Stocking or re-stocking with fish.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]</li> <li>• Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not</li> </ul>	<ul style="list-style-type: none"> <li>• Ennis to Limerick</li> <li>• Galway to Ennis</li> </ul>	County Clare	(NPWS, 2022) (Office of the Attorney General, 2018)
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required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these

activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.

Ballyallia Lough SPA (004041)	<a href="#">Ballyallia Lough SPA Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Wigeon</li> <li>• Gadwall</li> <li>• Teal</li> <li>• Mallard</li> <li>• Shoveler</li> <li>• Coot</li> <li>• Black-tailed godwit</li> <li>• Wetland waterbirds and</li> </ul>	<ul style="list-style-type: none"> <li>• Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.</li> <li>• Altering watercourses or wetlands, including changing the height of the water table, blocking or altering the flow of the water or deepening any channel.</li> <li>• Developing, operating or allowing leisure or sporting activities liable to cause significant disturbance to those birds listed in Schedule 3 of these Regulations or damage to their habitats.</li> <li>• Construction or alteration of tracks, path, roads, embankments, car parks or access routes, or using or permitting the use of lands for car parking.</li> <li>• Extracting water for irrigation or other purposes.</li> <li>• Planting of trees.</li> <li>• Reclamation or infilling.</li> <li>• Introduction (or re-introduction) into the wild of plants or animals not currently found in the area.</li> <li>• Any activity which destroys habitat, except normal maintenance activities as defined in approved farm plans.</li> <li>• Reclaiming land for agriculture purposes, including spraying or burning vegetation, clearing</li> </ul>	Galway to Ennis	County Clare	(NPWS, 2022) (Office of the Attorney General, 2010)
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Ballykenny-Fisherstown SPA (004101)	Bog <a href="#">Ballykenny-Fisherstown Bog SPA Conservation Objectives</a>	Greenland fronted goose	white	No supplementary conservation advice available	<ul style="list-style-type: none"> <li>• Longford to Cavan Longford</li> <li>• Roscommon to Longford</li> <li>• Castlebar to Longford</li> <li>• Athlone to Longford</li> <li>• Longford to Sligo</li> </ul>	County Longford	(NPWS, 2022)
Ballymacoda (Clonpriest and Pillmore) SAC (000077)	and <a href="#">Ballymacoda (Clonpriest and Pillmore) SAC Conservation Objectives</a>	<p>Estuaries</p> <p>Mudflats and sandflats not covered by seawater at low tide</p> <p>Salicornia and other annuals colonising mud and sand</p> <p>Atlantic salt meadows</p> <p>Mediterranean salt meadows</p>		<p>Reclamation, including infilling.</p> <p>Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</p> <p>Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.</p> <p>Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</p> <p>Undertaking scientific research involving the collection and removal of biological material.</p> <p>Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</p> <p>Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than</p>	<ul style="list-style-type: none"> <li>• Cork to Waterford</li> </ul>	County Cork	(NPWS, 2022) (Office of the Attorney General, 2017)

- temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater

- than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density

- unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Ballymacoda Bay SPA (004023)	<a href="#">Ballymacoda Bay SPA Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Wigeon</li> <li>• Teal</li> <li>• Ringed plover</li> <li>• Golden plover</li> <li>• Grey plover</li> <li>• Lapwing</li> <li>• Sanderling</li> <li>• Dunlin</li> <li>• Black-tailed godwit</li> <li>• Bar-tailed godwit</li> <li>• Curlew</li> <li>• Redshank</li> <li>• Turnstone</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> </ul>	Cork to Waterford County Cork	(NPWS, 2022) (Office of the Attorney General, 2013)
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- Black-headed gull
- Common gull
- Lesser black-backed gull
- Wetland and water birds
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes

Ballyman Glen SAC (000713)	<a href="#">Ballyman Glen SAC Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Petrifying springs with tufa formation</li> <li>• Alkaline fens</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for</li> </ul>	• Bray to Dublin	County Dublin, County Wickow	(NPWS, 2022) (Office of the Attorney General, 2019)
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- harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Ballynafagh Bog SAC (000391)	<a href="#">Ballynafagh Bog SAC Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Active raised bogs</li> <li>• Degraded raised bogs still capable of natural regeneration</li> <li>• Depressions on peat substrates of the Rhynchosporion</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• All activities relating to turf cutting and/or peat extraction.</li> <li>• Cutting, uprooting or otherwise removing plants.</li> </ul>	• Edenderry to Naas County Kildare	(NPWS, 2022) (Office of the Attorney General, 2017)
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[Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]

- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m

- from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or

- floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
  - Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
  - Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Water abstraction, sinking of boreholes and wells.
  - Felling of trees or removing timber, including dead wood.
  - Planting of trees or multi-annual bioenergy crops.
  - Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

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Ballynafagh Lake SAC (001387)	<a href="#">Ballynafagh Lake SAC Conservation Objectives</a>	Alkaline fens Desmoulin's Whorl Snail Marsh Fritillary	Reclamation, including infilling. Stocking or re-stocking with fish. Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock,	Edenderry to Naas	County Kildare	(NPWS, 2022) (Office of the Attorney
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minerals, mud, sand, gravel or other sediment.

Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]

Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]

Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.

Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]

Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m

General,  
2018)



from a wetland, lake, turlough or pond.]

Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.

Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.

Water abstraction, sinking of boreholes and wells.

Planting of trees or multi-annual bioenergy crops.

Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Ballyogan Lough SAC (000019)	<a href="#">Ballyogan Lough SAC Conservation Objectives</a>	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> [7210] Limestone pavements	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> </ul>	Galway to Ennis County Clare (NPWS, 2022) (The Stationery Office, 2021)
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- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded

grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on

established reseeded  
grassland or cultivated land  
provided it is greater than 20m  
from a river, stream or  
floodplain; or greater than  
50m from a wetland, lake,  
turlough or pond.]

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Grazing of livestock between 1st April and 31st October on traditional winterages.
- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or

		organised activities	recreational		
Ballysadare Bay SAC (000622)	<a href="#">Ballysadare Bay SAC Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Embryonic shifting dunes</li> <li>• Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)</li> <li>• Fixed coastal dunes with herbaceous vegetation (grey dunes)</li> <li>• Humid dune slacks</li> <li>• Narrow-mouthed Whorl Snail</li> <li>• Harbour Seal</li> </ul>	No supplementary conservation advice available	<ul style="list-style-type: none"> <li>• Sligo to Enniskillen</li> <li>• Sligo to Ballina</li> <li>• Longford to Sligo</li> </ul>	(NPWS, 2022)
Ballysadare Bay SPA (004129)	<a href="#">Ballysadare Bay SPA Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Light bellied brent goose</li> <li>• Grey plover</li> <li>• Dunlin</li> <li>• Bar-tailed godwit</li> <li>• Redshank</li> <li>• Wetland waterbirds and</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or</li> </ul>	<ul style="list-style-type: none"> <li>• Sligo to Enniskillen</li> <li>• Sligo to Ballina</li> <li>• Longford to Sligo</li> </ul>	(NPWS, 2022) (Office of the Attorney General, 2011)

reseeding. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Planting of trees or multi-annual bioenergy crops.
- Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
- Developing or allowing the development or operation of recreational/ visitor facilities or activities, at a commercial scale.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

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<p>Ballyseedy Wood SAC (002112) <a href="#">Ballyseedy Wood SAC Conservation Objectives</a></p>	<ul style="list-style-type: none"> <li>• Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i></li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants.</li> </ul>	<ul style="list-style-type: none"> <li>• Cork to Tralee</li> </ul>	<p>County Kerry</p>	<p>(NPWS, 2022) (Office of the Attorney General, 2016)</p>
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- [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a



- wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a

- wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
  - Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
  - Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Felling of trees or removing timber, including dead wood.
  - Planting of trees or multi-annual bioenergy crops.
  - Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

<p>Ben Bulbin, Gleniff and Glenade Complex SAC (000623)</p>	<p><a href="#">Ben Bulbin, Gleniff and Glenade Complex SAC Conservation Objectives</a></p>	<ul style="list-style-type: none"> <li>• Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation</li> <li>• Northern Atlantic wet heaths with Erica tetralix</li> <li>• European dry heaths</li> <li>• Alpine and Boreal heaths</li> <li>• Juniperus communis formations on heaths or calcareous grasslands</li> <li>• Semi-natural dry grasslands and scrubland facies on calcareous substrates (* important orchid sites)</li> <li>• Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)</li> <li>• Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels</li> <li>• Blanket bogs (* if active bog)</li> <li>• Transition mires and quaking bogs</li> <li>• Petrifying springs with tufa formation</li> <li>• Alkaline fens</li> </ul>	<p>No supplementary conservation advice available</p>	<p>Letterkenny to County Sligo (NPWS, 2022)</p>
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- Siliceous scree of the montane to snow levels
- Calcareous and calcshist screes of the montane to alpine levels
- Calcareous rocky slopes with chasmophytic vegetation
- Geyer's Whorl Snail
- Otter

Blackstairs (000770)	Mountains	SAC <a href="#">Blackstairs Mountains Conservation Objective</a> SAC	<ul style="list-style-type: none"> <li>• Northern Atlantic wet heaths with Erica tetralix</li> <li>• European dry heaths</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• All activities relating to turf cutting and/or peat extraction. [Consent is not required to continue domestic turf cutting from existing turf banks.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> </ul>	Kilkenny Enniscorthy	to County Carlow, County Wexford	(NPWS, 2022) (Office of the Attorney General, 2019)
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- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or

cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Burning, topping, clearing scrub or rough vegetation or reseeding. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded

grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Recreational use of an off-road vehicle.

Blackwater (004094)	Callows	SPA <a href="#">Blackwater Callows Conservation Objectives</a> SPA	<ul style="list-style-type: none"> <li>• Whooper swan</li> <li>• Wigeon</li> <li>• Teal</li> <li>• Black-tailed godwit</li> <li>• Wetland waterbirds and</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land</li> </ul>	Cork to Fermoy	County Waterford	(NPWS, 2022) (Office of the Attorney General, 2012)
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provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.

Blackwater (004028)	Estuary	SPA <a href="#">Blackwater Estuary SPA Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Wigeon</li> <li>• Golden plover</li> <li>• Lapwing</li> <li>• Dunlin</li> <li>• Black-tailed godwit</li> <li>• Bar-tailed godwit</li> <li>• Curlew</li> <li>• Redshank</li> <li>• Wetland waterbirds</li> </ul>	and	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded</li> </ul>	Cork to Waterford	County Waterford	(NPWS, 2022) (Office of the Attorney General, 2012)
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grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.
- Using or permitting the use of land for car parking.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Blackwater (Cork/Waterford) SAC (002170)	River <u>Blackwater</u> <u>(Cork/Waterford)</u> <u>Conservation Objectives</u>	<u>River</u> <u>SAC</u>	<ul style="list-style-type: none"> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Perennial vegetation of stony banks</li> <li>• Salicornia and other annuals colonising mud and sand</li> <li>• Atlantic salt meadows</li> <li>• Mediterranean salt meadows</li> <li>• Water courses of plain to montane levels with the Ranunculus fluitantis and</li> </ul>	No supplementary conservation advice available	<ul style="list-style-type: none"> <li>• Cork to Limerick</li> <li>• Cork to Fermoy</li> <li>• Cork to Waterford</li> </ul>	County Cork (NPWS, 2022)
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- Callitricho-Batrachion vegetation
- Old sessile oak woods with Ilex and Blechnum in the British Isles
- Alluvial forests with Alnus glutinosa and Fraxinus excelsior
- Freshwater pearl mussel
- White-clawed crayfish
- Sea lamprey
- Brook lamprey
- River lamprey
- Twaité shad
- Salmon
- Otter
- Killarney fern

Boleybrack (002032)	Mountain	SAC	<a href="#">Boleybrack Mountain SAC Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Natural dystrophic lakes and ponds</li> <li>• Northern Atlantic wet heaths with Erica tetralix</li> <li>• European dry heaths</li> <li>• Molinia meadows on calcareous, peaty or clayey-silt-laden soils</li> <li>• Blanket bogs (* if active bog)</li> </ul>	No supplementary conservation advice available	• Sligo Enniskillen	to County Leitrim	(NPWS, 2022)
Boyne Coast and Estuary (001957)	SAC	SAC	<a href="#">Boyne Coast and Estuary SAC Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Annual vegetation of drift lines</li> </ul>	No supplementary conservation advice available	• Dundalk Drogheda • Drogheda Balbriggan	to County Louth to	(NPWS, 2022)

- Salicornia and other annuals colonising mud and sand
- Atlantic salt meadows
- Embryonic shifting dunes
- Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)
- Fixed coastal dunes with herbaceous vegetation (grey dunes)

Boyne Estuary SPA (004080)	<u>Boyne Estuary SPA Conservation Objectives</u>	<ul style="list-style-type: none"> <li>• Shelduck</li> <li>• Oystercatcher</li> <li>• Golden plover</li> <li>• Grey plover</li> <li>• Lapwing</li> <li>• Knot</li> <li>• Sanderling</li> <li>• Black-tailed godwit</li> <li>• Redshank</li> <li>• Turnstone</li> <li>• Little tern</li> <li>• Wetland waterbirds and</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]</li> </ul>	<ul style="list-style-type: none"> <li>• Navan Drogheda</li> <li>• Dundalk Drogheda</li> <li>• Drogheda Balbriggan</li> </ul>	<p>to County Louth</p> <p>to</p> <p>to</p>	<p>(NPWS, 2022)</p> <p>(Office of the Attorney General, 2011)</p>
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- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Bray Head SAC (000714)	<a href="#">Bray Head SAC Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Vegetated sea cliffs of the Atlantic and Baltic coasts</li> <li>• European dry heaths</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Construction, removal or alteration of fences, stone</li> </ul>	<ul style="list-style-type: none"> <li>• Wicklow to Bray</li> <li>• Bray to Dublin</li> </ul>	County Wicklow	(NPWS, 2022) (Office of the Attorney General, 2017)
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walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]

- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is

greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on

- established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
  - Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Planting of trees or multi-annual bioenergy crops.
  - Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Bricklieve Mountains and Keishcorran SAC (001656)	and <a href="#">Bricklieve Mountains and Keishcorran SAC Conservation Objectives</a>	Turloughs Semi-natural dry grasslands and scrubland facies on calcareous substrates (* important orchid sites) Lowland hay meadows Calcareous and calcshist screes of the montane to alpine levels Marsh Fritillary White-clawed Crayfish	Reclamation, including infilling. Stocking or re-stocking with fish. Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment. Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.] Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of	Longford to Sligo	County Sligo	(NPWS, 2022) (Office of the Attorney General, 2018)
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crops on established reseeded grassland or cultivated land.]

Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.

Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]

Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]



Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Significant changes in livestock density (including introduction of grazing), changes in livestock

type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

Changing of agricultural use from hay meadow to any other use.

Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.

Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.

Water abstraction, sinking of boreholes and wells.

Planting of trees or multi-annual bioenergy crops.

Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Brown Bog SAC (002346)	<a href="#">Brown Bog SAC Conservation Objectives</a>	Active raised bogs Degraded raised bogs still capable of natural regeneration Depressions on peat substrates of the Rhynchosporion	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• All activities relating to turf cutting and/or peat extraction.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for</li> </ul>	Roscommon Longford Castlebar Longford Athlone Longford	to County Longford to to	(NPWS, 2022) (Office of the Attorney General, 2018)
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- harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than

- 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or

floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

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<p>Buckroney-Brittias Dunes and Fen SAC (000729)</p> <p><a href="#">Buckroney-Brittias Dunes and Fen SAC Conservation Objectives</a></p>	<ul style="list-style-type: none"> <li>• Annual vegetation of drift lines</li> <li>• Perennial vegetation of stony banks</li> <li>• Mediterranean salt meadows</li> </ul>	<p>No supplementary conservation advice available</p>	<ul style="list-style-type: none"> <li>• Enniscorthy Wicklow</li> </ul>	<p>to County Wicklow</p>	<p>(NPWS, 2022)</p>
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- Embryonic shifting dunes
- Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)
- Fixed coastal dunes with herbaceous vegetation (grey dunes)
- Atlantic decalcified fixed dunes
- Dunes with *Salix repens* ssp. *argentea*
- Humid dune slacks
- Alkaline fens

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Bunduff Lough And Machair/Trawalua/Mullaghmore SAC (000625)	And <a href="#">Bunduff Lough and Machair/Trawalua/Mullaghmore SAC Conservation Objectives</a>	• Mudflats and sandflats not covered by seawater at low tide	No supplementary conservation advice available	• Letterkenny Sligo	to County Sligo (NPWS, 2022)
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Bunduff Lough And Machair/Trawalua/Mullaghmore SAC (000625)	And <a href="#">Bunduff Lough and Machair/Trawalua/Mullaghmore SAC Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Large shallow inlets and bays</li> <li>• Reefs</li> <li>• Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)</li> <li>• Fixed coastal dunes with herbaceous vegetation (grey dunes)</li> <li>• Humid dune slacks</li> <li>• Machairs (* in Ireland)</li> <li>• <i>Juniperus communis</i> formations on heaths or calcareous grasslands</li> <li>• Semi-natural dry grasslands and</li> </ul>	No supplementary conservation advice available	• Letterkenny Sligo	to County Sligo (NPWS, 2022)
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			scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)				
			<ul style="list-style-type: none"> <li>• Alkaline fens</li> <li>• Euphydryas aurinia (Marsh Fritillary)</li> <li>• Petalophyllum ralfsii (Petalwort)</li> </ul>				
Caherglassaun Turlough SAC (00238)	<a href="#">Caherglassaun Turlough SAC Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Turloughs</li> <li>• Rivers with muddy banks with Chenopodion rubri p.p. and Bidenton p.p. vegetation</li> <li>• Lesser Horseshoe Bat</li> </ul>	No supplementary conservation advice available	•	Galway to Ennis	County Galway	(NPWS, 2022)
Carlingford Lough SPA (004078)	<a href="#">Carlingford Lough SPA Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Light-bellied brent goose</li> <li>• Wetland and waterbirds</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Introduction or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or</li> </ul>	•	Newry to Dundalk	County Louth	(NPWS, 2022) (Office of the Attorney General, 2012)

floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Drainage works including digging, deepening, widening or blocking a drain watercourse or waterbody.
- Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.
- Harvesting marine invertebrate species in intertidal areas
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

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Carlingford (000453)	Mountain	SAC	<a href="#">Carlingford Mountain Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Northern Atlantic wet heaths with Erica tetralix</li> <li>• European dry heaths</li> <li>• Alpine and Boreal heaths</li> <li>• Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)</li> <li>• Blanket bogs (* if active bog)</li> <li>• Transition mires and quaking bogs</li> <li>• Alkaline fens</li> </ul>	No supplementary conservation advice available	•	Newry to Dundalk	County Louth	(NPWS, 2022)
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- Siliceous scree of the montane to snow levels
- Calcareous rocky slopes with chasmophytic vegetation
- Siliceous rocky slopes with chasmophytic vegetation

Carlingford Shore SAC (002306) •

- Annual vegetation of drift lines
- Perennial vegetation of stony banks
- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not

Newry to Dundalk County Louth (NPWS, 2022)  
(Office of the Attorney General, 2018)

required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded

grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.

- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

<p>Carn Park Bog SAC (002336)</p>	<p>Active raised bogs Degraded raised bogs still capable of natural regeneration</p>	<p>Reclamation, including infilling. Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment. All activities relating to turf cutting and/or peat extraction. Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.] Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.] Construction or alteration of tracks, paths, roads, bridges, culverts or access routes. Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not</p>	<p>Athlone to Mullingar County Westmeath</p>	<p>(NPWS, 2022) (Office of the Attorney General, 2016)</p>
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required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded

grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.

Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.  
 Water abstraction, sinking of boreholes and wells.  
 Felling of trees or removing timber, including dead wood.  
 Planting of trees or multi-annual bioenergy crops.  
 Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Carnsore Point SAC (002269)	<a href="#"><u>Carnsore Point SAC Conservation Objectives</u></a>	Mudflats and sandflats not covered by seawater at low tide Reefs	<p>Reclamation, including infilling. Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</p> <p>Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</p> <p>Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</p> <p>Undertaking scientific research involving the collection and removal of biological material.</p> <p>Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</p>	Wexford to County Rosslare Europort Wexford	(NPWS, 2022) (Office of the Attorney General, 2016)
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Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.

Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.

Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.



Harvesting marine invertebrate species in intertidal areas.  
 Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Castlemaine (000343)	Harbour	SAC <a href="#">Castlemaine Harbour SAC Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Annual vegetation of drift lines</li> <li>• Perennial vegetation of stony banks</li> <li>• Vegetated sea cliffs of the Atlantic and Baltic coasts</li> <li>• Salicornia and other annuals colonising mud and sand</li> <li>• Atlantic salt meadows (Glaucopuccinellietalia maritima)</li> <li>• Mediterranean salt meadows (Juncetalia maritimi)</li> <li>• Embryonic shifting dunes</li> <li>• Shifting dunes along the shoreline with Ammophila arenaria (white dunes)</li> <li>• Fixed coastal dunes with herbaceous vegetation (grey dunes)</li> </ul>	No supplementary conservation advice available	Cork to Tralee	County Kerry (NPWS, 2022)
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- Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*)
- Humid dune slacks
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)
- *Petromyzon marinus* (Sea Lamprey)
- *Lampetra fluviatilis* (River Lamprey)
- *Salmo salar* (Salmon)
- *Lutra lutra* (Otter)
- *Petalophyllum ralfsii* (Petalwort)

Charleville Wood SAC (000571)	<a href="#">Charleville Wood SAC Conservation Objectives</a>	<ul style="list-style-type: none"> <li>• Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i></li> <li>• Desmoulin's Whorl Snail</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Stocking or re-stocking with fish.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> </ul>	<ul style="list-style-type: none"> <li>• Mullingar Tullamore</li> <li>• Tullamore Portlaoise</li> <li>• Athlone Tullamore</li> </ul>	<p>to County Offaly</p> <p>to</p> <p>to</p>	<p>(NPWS, 2022)</p> <p>(Office of the Attorney General, 2019)</p>
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- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials.

[Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in

livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Clare Glen SAC (000930)	<a href="#">Clare Glen SAC Conservation Objectives</a>	Old sessile oak woods with Ilex and Blechnum in the British Isles Killarney Fern	Reclamation, including infilling. Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment. Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.] Introduction, or re-introduction, of plants or animals not found in	Limerick to Kilkenny	County Limerick, County Tipperary	(NPWS, 2022) (Office of the Attorney General, 2016)
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the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]

Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.

Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]

Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater

than 50m from a wetland, lake, turlough or pond.]

Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.

Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.

Water abstraction, sinking of boreholes and wells.

Felling of trees or removing timber, including dead wood.

Planting of trees or multi-annual bioenergy crops.

Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

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<p>Clew Bay Complex SAC (001482) <a href="#">Clew Bay Complex SAC Conservation Objectives</a></p>	<ul style="list-style-type: none"> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Coastal lagoons</li> <li>• Large shallow inlets and bays</li> <li>• Annual vegetation of drift lines</li> <li>• Perennial vegetation of stony banks</li> </ul>	<p>No supplementary conservation advice available</p>	<ul style="list-style-type: none"> <li>• Westport Castlebar</li> </ul>	<p>to County Mayo (NPWS, 2022)</p>
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- Atlantic salt meadows (Glauco-Puccinellietalia maritimae)
- Embryonic shifting dunes
- Shifting dunes along the shoreline with Ammophila arenaria (white dunes)
- Machairs (\* in Ireland)
- Old sessile oak woods with Ilex and Blechnum in the British Isles
- Lutra lutra (Otter)
- Phoca vitulina (Harbour Seal)

Clogher Head SAC (001459)	<a href="#">Clogher Head SAC Conservation Objectives</a>	Vegetated sea cliffs of the Atlantic and Baltic coasts European dry heaths	Reclamation, including infilling. Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment. Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.] Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.] Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.	Dundalk Drogheda	to County Louth	(NPWS, 2022) (Office of the Attorney General, 2019)
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Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]

Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river,

stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.

Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given

that a lower percentage is applicable to a particular site.]  
 Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.  
 Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.  
 Planting of trees or multi-annual bioenergy crops.  
 Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Cloonchambers Bog SAC (000600)	<a href="#">Cloonchambers Bog SAC Conservation Objectives</a>	Active raised bogs Degraded raised bogs still capable of natural regeneration Depressions on peat substrates of the Rhynchosporion	No supplementary conservation advice available	Castlebar Longford to County Roscommon	(NPWS, 2022)
Clooneen Bog SAC (002348)	<a href="#">Clooneen Bog SAC Conservation Objectives</a>	<ul style="list-style-type: none"> <li>Active raised bogs</li> <li>Degraded raised bogs still capable of natural regeneration</li> <li>Depressions on peat substrates of the Rhynchosporion</li> <li>Bog woodland</li> </ul>	No supplementary conservation advice available	<ul style="list-style-type: none"> <li>Longford to Cavan County Longford</li> <li>Longford to Sligo</li> </ul>	(NPWS, 2022)
Coole-Garryland Complex SAC (000252)	<a href="#">Coole-Garryland Complex SAC Conservation Objectives</a>	<ul style="list-style-type: none"> <li>Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation</li> <li>Turloughs</li> </ul>	No supplementary conservation advice available	Galway to Ennis County Galway	(NPWS, 2022)

- Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation
- Juniperus communis formations on heaths or calcareous grasslands
- Semi-natural dry grasslands and scrubland facies on calcareous substrates (\* important orchid sites)
- Limestone pavements
- Taxus baccata woods of the British Isles

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Coole-Garryland SPA (004107)	<a href="#">Coole-Garryland SPA</a> <a href="#">Conservation Objectives</a>	• Whooper swan	<ul style="list-style-type: none"> <li>• Any activity that involves the deliberate killing or capture of any species of naturally occurring bird in the wild state, save where a specific derogation within the meaning of Article 9 of the Directive is in place.</li> <li>• The destruction, damage or removal of nests or eggs or any disturbance, particularly during periods of breeding or rearing, save where a specific derogation within the meaning of Article 9 of the Directive is in place.</li> </ul>	• Galway to Ennis	County Galway	(NPWS, 2022) (Office of the Attorney General, 2010)
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- The rearing or keeping of birds, the hunting and capture of which is prohibited, save where a specific derogation within the meaning of Article 7 of the Directive is in place.
- Altering watercourses or wetlands, including changing the height of the water table, blocking or altering the flow of the water or deepening any channel.
- Developing, operating or allowing leisure or sporting activities liable to cause significant disturbance to those birds listed in Schedule 3 of these Regulations or damage to their habitats.
- Any activity intended to disturb those birds listed in Schedule 3 of these Regulations including by mechanical, air or wind powered or audible means.
- Construction or alteration of tracks, paths, roads, embankments, car parks or access routes, or using or permitting the use of land for car parking.
- Extracting water for irrigation or other purposes.
- Dumping, burning or disposal of any materials.
- Planting of trees.
- Reclamation or infilling.
- Introduction (or re-introduction) into the wild of plants or animals not currently found in the area.

- Grazing of livestock above a recommended density and period as defined in approved farm plans.
- Any activity which destroys habitat, except normal maintenance activities as defined in approved farm plans.
- Improving or reclaiming land for agricultural purposes, including spraying or burning vegetation, clearing scrub and rough vegetation, draining or moving soil, ploughing, harrowing or reseeded.
- Any other activity of which notice may be given by the Minister from time to time.

Cork Harbour SPA (004030)	•	<ul style="list-style-type: none"> <li>• Little grebe</li> <li>• Great crested grebe</li> <li>• Cormorant</li> <li>• Grey heron</li> <li>• Shelduck</li> <li>• Wigeon</li> <li>• Teal</li> <li>• Pintail</li> <li>• Shoveler</li> <li>• Red-breasted merganser</li> <li>• Oystercatcher</li> <li>• Golden plover</li> <li>• Grey plover</li> <li>• Lapwing</li> <li>• Dunlin</li> <li>• Black-tailed godwit</li> <li>• Bar-tailed godwit</li> <li>• Curlew</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• [391]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land</li> </ul>	<ul style="list-style-type: none"> <li>• Cork to Bandon</li> <li>• Cork to Kinsale</li> <li>• Cork airport to Carrigaline</li> <li>• Cork to Cobh</li> <li>• Cork to Fermoy</li> <li>• Cork to Port of Cork</li> <li>• Port of Cork to Carrigaline</li> <li>• Cork to Waterford</li> <li>• Cork to Cork airport</li> <li>• Cobh to Midleton</li> </ul>	County Cork	(NPWS, 2022) (The Stationery Office, 2021)
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- Redshank
  - Black-headed gull
  - Common gull
  - Lesser black-backed gull
  - Common tern
  - Wetland and waterbirds
- provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Planting of trees or multi-annual bioenergy crops.
  - Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
  - Harvesting marine invertebrate species in intertidal areas.
  - Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Corliskea/Trien/Cloonfelliv Bog SAC (002110)	Active raised bogs Degraded raised bogs still capable of natural regeneration Depressions on peat substrates of the Rhynchosporion Bog woodland	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• All activities relating to turf cutting and/or peat extraction.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of</li> </ul>	Castlebar Longford	to County Roscommon	(NPWS, 2022) (The Stationery Office, 2021)
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- crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river,

- stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less

than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Corratirrim SAC (000979)	Limestone pavements	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> </ul>	Sligo to Enniskillen	County Cavan	(NPWS, 2022) (The Stationery Office, 2021)
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- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials.

[Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing),

changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

- Grazing of livestock between 1st April and 31st October on traditional winterages.
- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

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Cregganna Marsh SPA (004142) •	• Greenland white-fronted goose	• Reclamation, including infilling. • Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.] • Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.	• Galway to Ennis	County Galway	(NPWS, 2022) (Office of the Attorney General, 2019)
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- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Recreational use of an off-road vehicle.

Croaghonagh (000129)	Bog	SAC •	• Blanket bogs (* if active bog)	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or</li> </ul>	• Letterkenny Sligo	to County Donegal	(NPWS, 2022) (Office of the Attorney General, 2019)
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animals not found in the area.  
[Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]

- All activities relating to turf cutting and/or peat extraction. [Consent is not required to continue domestic turf cutting from existing turf banks.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]



- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Crosswood Bog SAC (002337) •

- Active raised bogs
- Degraded raised bogs still capable of natural regeneration
- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- All activities relating to turf cutting and/or peat extraction.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m
- Athlone Mullingar
- Limerick Athlone
- Athlone Tulamore
- to County Westmeath
- to
- to
- (NPWS, 2022)
- (The Stationery Office, 2021)

from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river,

stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- ARC 24 Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.



- air, gas, wind powered or audible means.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.
- Using or permitting the use of land for car parking.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes

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<p>Cummeen Strand/Drumcliff Bay • (Sligo Bay) SAC (000627)</p>	<ul style="list-style-type: none"> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Embryonic shifting dunes</li> <li>• Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)</li> <li>• Fixed coastal dunes with herbaceous vegetation (grey dunes)</li> <li>• <i>Juniperus communis</i> formations on heaths or calcareous grasslands</li> <li>• Semi-natural dry grasslands and scrubland facies on calcareous substrates (* important orchid sites)</li> </ul>	<p>No supplementary conservation advice available</p>	<ul style="list-style-type: none"> <li>• Letterkenny to Sligo</li> <li>• Sligo to Enniskillen</li> <li>• Sligo to Ballina</li> <li>• Longford to Sligo</li> </ul>	<p>to County Sligo (NPWS, 2022)</p>
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- Petrifying springs with tufa formation
- Narrow-mouthed Whorl Snail
- Sea Lamprey
- River Lamprey
- Harbour Seal

Dalkey Islands SPA (004172)	•	<ul style="list-style-type: none"> <li>• Roseate tern</li> <li>• Common tern</li> <li>• Arctic tern</li> </ul>	<ul style="list-style-type: none"> <li>• Any activity that involves the deliberate killing or capture of any species of naturally occurring bird in the wild state, save where a specific derogation within the meaning of Article 9 of the Directive is in place.</li> <li>• The destruction, damage or removal of nests or eggs or any disturbance, particularly during periods of breeding or rearing, save where a specific derogation within the meaning of Article 9 of the Directive is in place.</li> <li>• The rearing or keeping of birds, the hunting and capture of which is prohibited, save where a specific derogation within the meaning of Article 7 of the Directive is in place.</li> <li>• Burning areas of vegetation.</li> <li>• Developing, operating or allowing leisure or sporting activities liable to cause significant disturbance to those birds listed in Schedule 3 of these Regulations or damage to their habitats.</li> <li>• Construction or alteration of tracks, paths, roads, embankments, car parks or</li> </ul>	• Bray to Dublin	County Dublin	(NPWS, 2022) (Office of the Attorney General, 2010)
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- access routes, or using or permitting the use of land for car parking.
- Dumping, burning or disposal of any materials.
- Planting of trees.
- Reclamation or infilling.
- Removal of soil, mud, sand, gravel, rock or minerals.
- Introduction (or re-introduction) into the wild of plants or animals not currently found in the area.
- Grazing of livestock above a recommended density and period as defined in approved farm plans.
- Any activity which destroys habitat, except normal maintenance activities as defined in approved farm plans.
- Reclaiming land for agricultural purposes, including spraying or burning vegetation, clearing scrub and rough vegetation, draining or moving soil, ploughing, harrowing or reseeding.
- Any other activity of which notice may be given by the Minister from time to time.

Donegal Bay (Murvagh) SAC  
(000133)

Mudflats and sandflats not covered by seawater at low tide  
Fixed coastal dunes with herbaceous vegetation (grey dunes)  
Salicion arenariae  
Humid dune slacks  
Harbour Seal

Reclamation, including infilling.  
Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.  
Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of

Letterkenny  
Sligo

to County  
Donegal

(NPWS, 2022)  
(Office of the Attorney General, 2019)

- cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Undertaking scientific research involving the collection and removal of biological material.
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m

- from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

- Using or permitting the use of land for car parking where it may damage the vegetation, soil or substrate.
- Undertaking active acoustic surveys in the marine environment.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Donegal Bay SPA (004151)	•	<ul style="list-style-type: none"> <li>• Great northern diver</li> <li>• Light-bellied brent goose</li> <li>• Common scoter</li> <li>• Sanderling</li> <li>• Wetland waterbirds</li> </ul>	and	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeding. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]</li> <li>• Drainage works including digging, deepening, widening</li> </ul>	Letterkenny Sligo	to County Donegal	(NPWS, 2022) (Office of the Attorney General, 2011)
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- or blocking a drain, watercourse or waterbody.
- Planting of trees or multi-annual bioenergy crops.
- Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
- Developing or allowing the development or operation of recreational/visitor facilities or activities, at a commercial scale.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Dromore Woods And Loughs • SAC (000032)

- Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation
- Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels
- Limestone pavements
- Rhinolophus hipposideros (Lesser Horseshoe Bat)
- Lutra lutra (Otter)
- Reclamation, including infilling.
- Stocking or re-stocking with fish.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]

Galway to Ennis County Clare (NPWS, 2022)  
(Office of the Attorney General, 2020)

- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than



50m from a wetland, lake, turlough or pond.]

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Grazing of livestock between 1st April and 31st October on traditional winterages.
- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

			<ul style="list-style-type: none"> <li>• Alteration, renovation or removal of buildings, ruins or other structures.</li> <li>• Lighting up caves, buildings or other places used by bats for roosts.</li> </ul>	
<p>Drumcliff Bay SPA (004013)</p>	<ul style="list-style-type: none"> <li>• Sanderling</li> <li>• Bar-tailed godwit</li> <li>• Wetland waterbirds</li> </ul>	<p>and</p>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]</li> <li>• Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.</li> <li>• Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Letterkenny Sligo to County Sligo (NPWS, 2022) (Office of the Attorney General, 2012)</li> </ul>

- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Dundalk Bay SAC (000455)

•

- Estuaries
- Mudflats and sandflats not covered by seawater at low tide
- Perennial vegetation of stony banks
- Salicornia and other annuals colonising mud and sand
- Atlantic salt meadows
- Mediterranean salt meadows
- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Undertaking scientific research involving the collection and removal of biological material.
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on

- Newry to Dundalk
- Dundalk to Drogheda
- Dundalk to Armagh
- Dundalk to Carrickmacross
- Dundalk to Monaghan

County Louth (NPWS, 2022)  
(Office of the Attorney General, 2019)

established reseeded  
grassland or cultivated land  
provided it is greater than 50m  
from a river, stream, floodplain,  
wetland, lake, turlough or  
pond.]

- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land

provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening

- or blocking a drain, watercourse or waterbody.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Dundalk Bay SPA (004026)	•	<ul style="list-style-type: none"> <li>• Great crested grebe</li> <li>• Greylag goose</li> <li>• Light-bellied brent goose</li> <li>• Shelduck</li> <li>• Teal</li> <li>• Mallard</li> <li>• Pintail</li> <li>• Common scoter</li> <li>• Red-breasted merganser</li> <li>• Oystercatcher</li> <li>• Ringed plover</li> <li>• Golden plover</li> <li>• Grey plover</li> <li>• Lapwing</li> <li>• Knot</li> <li>• Dunlin</li> <li>• Black-tailed godwit</li> <li>• Bar-tailed godwit</li> <li>• Curlew</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.].</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeded. Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.</li> </ul>	<ul style="list-style-type: none"> <li>• Newry to Dundalk</li> <li>• Dundalk to Drogheda</li> <li>• Dundalk to Armagh</li> <li>• Dundalk to Carrickmacross</li> <li>• Dundalk to Monaghan</li> </ul>	<p>County Lough (NPWS, 2022)                  (Office of the Attorney General, 2012)</p>
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- Redshank
  - Black-headed gull
  - Common gull
  - Herring gull
  - Wetland waterbirds
- and
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Planting of trees or multi-annual bioenergy crops.
  - Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
  - Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.
  - Harvesting marine invertebrate species in intertidal areas.
  - Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Dungarvan (004032)	Harbour	SPA •	<ul style="list-style-type: none"> <li>• Great crested grebe</li> <li>• Light-bellied brent</li> <li>• Shelduck</li> <li>• Red-breasted merganser</li> <li>• Oystercatcher</li> <li>• Golden plover</li> <li>• Grey plover</li> <li>• Lapwing</li> <li>• Knot</li> <li>• Dunlin</li> <li>• Black-tailed godwit</li> <li>• Bar-tailed godwit</li> <li>• Curlew</li> <li>• Redshank</li> <li>• Turnstone</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded</li> </ul>	Cork to Waterford	County Waterford	(NPWS, 2022) (Office of the Attorney General, 2019)
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- Wetland waterbirds and grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Planting of trees or multi-annual bioenergy crops.
  - Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
  - Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
  - Harvesting marine invertebrate species in intertidal areas.
  - Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Dunmuckrum Turloughs SAC (002303)	• Turloughs	No supplementary conservation advice available	• Letterkenny Sligo	to County Donegal	(NPWS, 2022)
Durnesh Lough SAC (00138)	• Coastal lagoons • Molinia meadows on calcareous, peaty or clayey-silt-laden soils	• Reclamation, including infilling. • Stocking or re-stocking with fish. • Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment. • Cutting, uprooting or otherwise removing plants. [Consent is	• Letterkenny Sligo	to County Donegal	(NPWS, 2022) (Office of the Attorney General, 2018)



not required for harvesting of cultivated crops, or for grazing or mowing.]

- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not

required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas,

except over prescribed access routes.

<p>East Burren Complex SAC • (001926)</p>	<ul style="list-style-type: none"> <li>• Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.</li> <li>• Turloughs</li> <li>• Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation</li> <li>• Alpine and Boreal heaths</li> <li>• Juniperus communis formations on heaths or calcareous grasslands</li> <li>• Calaminarian grasslands of the <i>Violetalia calaminariae</i></li> <li>• Semi-natural dry grasslands and scrubland facies on calcareous substrates (* important orchid sites)</li> <li>• Lowland hay meadows</li> <li>• Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i></li> <li>• Petrifying springs with tufa formation</li> <li>• Alkaline fens</li> <li>• Limestone pavements</li> </ul>	<p>No supplementary conservation advice available</p>	<p>Galway to Ennis County Clare (NPWS, 2022)</p>
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- Caves not open to the public
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*
- Marsh Fritillary
- Lesser Horseshoe Bat
- Otter

Fin Lough (Offaly) SAC (000576) •

- |  |   |  |                                   |   |
|--|---|--|-----------------------------------|---|
| <ul style="list-style-type: none"> <li>• Alkaline fens</li> <li>• Geyer's Whorl Snail</li> </ul> | <ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]</li> <li>• Digging, ploughing, harrowing or otherwise disturbing soil or</li> </ul> | <ul style="list-style-type: none"> <li>• Limerick Athlone</li> <li>• Athlone Tulamore</li> </ul> | <p>to County Offaly</p> <p>to</p> | <p>(NPWS, 2022)</p> <p>(Office of the Attorney General, 2017)</p> |
|--|---|--|-----------------------------------|---|

substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent

is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.

- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Galway Bay Complex SAC •  
(000268)

- Mudflats and sandflats not covered by seawater at low tide
- Coastal lagoons
- Large shallow inlets and bays
- Reefs
- Perennial vegetation of stony banks
- Vegetated sea cliffs of the Atlantic and Baltic coasts
- Salicornia and other annuals colonising mud and sand
- Atlantic salt meadows
- Mediterranean salt meadows
- Turloughs
- Juniperus communis formations on heaths or calcareous grasslands
- Semi-natural dry grasslands and scrubland facies on calcareous substrates (\* important orchid sites)
- Reclamation, including infilling.
- Stocking or re-stocking with fish.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.] Undertaking scientific research involving the collection and removal of biological material.
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or

- Galway to County Clare (NPWS, 2022)
- Castlebar (The Stationery Office, 2021)
- Galway to Athlone
- Galway to Ennis



- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*
  - Alkaline fens
  - Limestone pavements
  - Otter
  - Harbour Seal
- substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on

established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Grazing of livestock between 1st April and 31st October on traditional winterages.

- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Undertaking active acoustic surveys in the marine environment.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Glendine Wood SAC (002324)	Killarney Fern	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is</li> </ul>	Cork to Waterford	County Waterford	(NPWS, 2022) (Office of the Attorney General, 2016)
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- not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not

- required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
  - Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
  - Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Water abstraction, sinking of boreholes and wells.
  - Felling of trees or removing timber, including dead wood.
  - Planting of trees or multi-annual bioenergy crops.
  - Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Glenloughaun Esker SAC •  
(002213)

- Semi-natural dry grasslands and scrubland facies on calcareous substrates (\* important orchid sites)
- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it

Galway to Athlone County Galway

(NPWS, 2022)  
(Office of the Attorney General, 2016)

is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is



not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock

density unless notice has been given that a lower percentage is applicable to a particular site.]

- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Great Island Channel SAC •  
(001058)

- Mudflats and sandflats not covered by seawater at low tide
- Atlantic salt meadows
- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of

- Cork to Cobh
- Cork to Port of Cork
- Cork to Waterford
- Cobh to Midleton

County Cork (NPWS, 2022)  
(Office of the Attorney General, 2019)

- crops on established reseeded grassland or cultivated land.]
- Undertaking scientific research involving the collection and removal of biological material.
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m

from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or

floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Inner Galway Bay SPA (004031) •

- Black-throated diver
- Great northern diver
- Cormorant

- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock,

- Galway to County Clare, (NPWS, 2022)
- Castlebar County Galway
- Galway to Athlone
- Galway to Ennis
- (Office of the

- Grey heron
  - Light-bellied goose
  - Wigeon
  - Teal
  - Red-breasted merganser
  - Ringer plover
  - Golden plover
  - Lapwing
  - Dunlin
  - Bar-tailed godwit
  - Curlew
  - Redshank
  - Turnstone
  - Black-headed gull
  - Common gull
  - Sandwich tern
  - Common tern
  - Wetland waterbirds
- brent
- and
- minerals, mud, sand, gravel or other sediment.
  - Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Planting of trees or multi-annual bioenergy crops.
  - Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
  - Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
  - Harvesting marine invertebrate species in intertidal areas.
  - Driving mechanically propelled vehicles in intertidal areas,

Attorney  
General,  
2019)



on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established



reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.

- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Killala Bay/Moy Estuary SAC •  
(000458)

- Estuaries
- Mudflats and sandflats not covered by seawater at low tide
- Annual vegetation of drift lines
- Vegetated sea cliffs of the Atlantic and Baltic coasts
- Salicornia and other annuals colonising mud and sand
- Atlantic salt meadows (Glauco-Puccinellietalia maritima)
- Embryonic shifting dunes
- Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)
- Fixed coastal dunes with herbaceous vegetation (grey dunes)
- Humid dune slacks
- *Vertigo angustior* (Narrow-mouthed Whorl Snail)
- Reclamation, including infilling.
- Stocking or re-stocking with fish.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Undertaking scientific research involving the collection and removal of biological material.
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than

Sligo to Ballina  
Ballina to  
Castlebar

County Mayo

(NPWS, 2022)  
(Office of the Attorney General, 2020)

- *Petromyzon marinus* (Sea Lamprey) [1095]
- *Phoca vitulina* (Harbour Seal)
  - temporary electric fencing. [Consent is not required for normal maintenance.]
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or

- greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not

required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Using or permitting the use of land for car parking where it may damage the vegetation, soil or substrate.
- Undertaking active acoustic surveys in the marine environment.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Killarney National Park SPA • (004038)	<ul style="list-style-type: none"> <li>• Merlin</li> <li>• Greenland white-fronted goose</li> </ul>	No supplementary conservation advice available	• Cork to Tralee	County Kerry (NPWS, 2022)
Killarney National Park, Macgillicuddy's Reeks and Caragh River Catchment SAC (000365)	<ul style="list-style-type: none"> <li>• Oligotrophic waters containing very few minerals of sandy plains</li> <li>• Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea</li> <li>• Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation</li> <li>• Northern Atlantic wet heaths with Erica tetralix</li> <li>• European dry heaths</li> <li>• Alpine and Boreal heaths</li> <li>• Juniperus communis formations on heaths or calcareous grasslands</li> <li>• Calaminarian grasslands of the Violetalia calaminariae</li> </ul>	No supplementary conservation advice available	• Cork to Tralee	County Kerry (NPWS, 2022)

- Molinia meadows on calcareous, peaty or clayey-silt-laden soils
- Blanket bogs (\* if active bog)
- Depressions on peat substrates of the Rhynchosporion
- Old sessile oak woods with Ilex and Blechnum in the British Isles
- Alluvial forests with Alnus glutinosa and Fraxinus excelsior
- Taxus baccata woods of the British Isles
- Kerry Slug
- Freshwater Pearl Mussel
- Marsh Fritillary
- Sea Lamprey
- Brook Lamprey
- River Lamprey
- Salmon
- Lesser Horseshoe Bat
- Otter
- Killarney Fern
- Slender Naiad
- Killarney Shad

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Killyconny Bog (Cloghbally) SAC (000006)	Active raised bogs	Reclamation, including infilling.	Cavan to Navan	County Cavan, County Meath	(NPWS, 2022)
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Degraded raised bogs still capable of natural regeneration

Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.

All activities relating to turf cutting and/or peat extraction.

Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]

Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]

Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.

Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

(Office of the Attorney General, 2018)



Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland

or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.

Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.

Water abstraction, sinking of boreholes and wells.

Felling of trees or removing timber, including dead wood.

Planting of trees or multi-annual bioenergy crops.

Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Kilroosky Lough Cluster SAC (001786)

Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. Calcareous fens with Cladium mariscus and

- Reclamation, including infilling.
- Stocking or re-stocking with fish.
- Blasting, drilling, dredging or otherwise removing or

• Armagh to Cavan County Enniskillen to Monaghan Cavan to Dundalk Monaghan

(NPWS, 2022) (Office of the Attorney

species of the Caricion  
davallianae  
Alkaline fens  
White-clawed Crayfish

- disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

General,  
2016)

- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded

grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.

- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Lisbigney Bog SAC (000869)	•	<ul style="list-style-type: none"> <li>• Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i></li> <li>• Desmoulin's Whorl Snail</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Stocking or re-stocking with fish.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing.</li> </ul>	• Kilkenny Portlaoise	to County Laois	(NPWS, 2022) (Office of the Attorney General, 2016)
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- [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or

floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening



- or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

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Lough Arrow SAC (001673)	•	• Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	• Reclamation, including infilling. • Stocking or re-stocking with fish. • Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment. • Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.] • Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.] • Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]	• Longford to Sligo	County Roscommon, County Sligo	(NPWS, 2022) (Office of the Attorney General, 2018)
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- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m

- from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
  - Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
  - Drainage works including digging, deepening, widening

			<ul style="list-style-type: none"> <li>or blocking a drain, watercourse or waterbody.</li> <li>• Water abstraction, sinking of boreholes and wells.</li> <li>• Planting of trees or multi-annual bioenergy crops.</li> <li>• Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.</li> </ul>				
Lough Arrow SPA (004050)	•	<ul style="list-style-type: none"> <li>• Little grebe</li> <li>• Tufted duck</li> <li>• Wetland waterbirds</li> </ul>	and	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeding. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]</li> <li>• Drainage works including digging, deepening, widening</li> </ul>	• Longford to Sligo	County Sligo	(NPWS, 2022) (Office of the Attorney General, 2011)

or blocking a drain, watercourse or waterbody.

- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or allowing the development or operation of recreational/ visitor facilities or activities, at a commercial scale.

Lough Conn and Lough Cullin • SPA (004228)

- Tufted duck
- Common scoter
- Common gull
- Greenland fronted goose
- Wetland waterbirds

white- and

- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Burning, topping, clearing scrub or rough vegetation or reseeding. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Drainage works including digging, deepening, widening

• Ballina Castlebar

to County Mayo

(NPWS, 2022) (Office of the Attorney General, 2011)

- or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.

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Lough Corrib SAC (000297)	•	<ul style="list-style-type: none"> <li>• Oligotrophic waters containing very few minerals of sandy plains</li> <li>• Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea</li> <li>• Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.</li> <li>• Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation</li> <li>• Semi-natural dry grasslands and scrubland facies on calcareous substrates</li> </ul>	No supplementary conservation advice available	<ul style="list-style-type: none"> <li>• Galway to Castlebar</li> <li>• Galway to Athlone</li> <li>• Galway to Ennis</li> </ul>	to County Galway (NPWS, 2022)
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- (\* important orchid sites)
- Molinia meadows on calcareous, peaty or clayey-silt-laden soils
  - Active raised bogs
  - Degraded raised bogs still capable of natural regeneration
  - Depressions on peat substrates of the Rhynchosporion
  - Calcareous fens with Cladium mariscus and species of the Caricion davallianae
  - Petrifying springs with tufa formation
  - Alkaline fens
  - Limestone pavements
  - Old sessile oak woods with Ilex and Blechnum in the British Isles
  - Bog woodland
  - Freshwater pearl mussel
  - White-clawed crayfish
  - Sea lamprey
  - Brook lamprey
  - Salmon
  - Lesser horseshoe bat
  - Otter
  - Slender naiad
  - Slender green feather-moss

Lough Derg (Shannon) SPA •  
(004058)

- Cormorant
- Tufted duck
- Goldeneye
- Common tern
- Wetland waterbirds

and

- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.

Limerick to Athlone County Clare, (NPWS, 2022)  
Limerick to County Galway, (Office of the Attorney General, 2019)  
Portlaoise County Tipperary



		<ul style="list-style-type: none"> <li>• Planting of trees or multi-annual bioenergy crops.</li> <li>• Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.</li> </ul>	
<p>Lough Derg, North-east Shore • SAC (002241)</p>	<ul style="list-style-type: none"> <li>• Juniperus communis formations on heaths or calcareous grasslands</li> <li>• Calcareous fens with Cladium mariscus and species of the Caricion davallianae</li> <li>• Alkaline fens</li> <li>• Limestone pavements</li> <li>• Alluvial forests with Alnus glutinosa and Fraxinus excelsior</li> <li>• Taxus baccata woods of the British Isles</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]</li> <li>• Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on</li> </ul>	<ul style="list-style-type: none"> <li>• Limerick Athlone to County Galway, County Tipperary (NPWS, 2022) (Office of the Attorney General, 2018)</li> </ul>

established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on

established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

- Grazing of livestock between 1st April and 31st October on traditional winterages.
- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Lough Ennell SAC (000685)	•	<ul style="list-style-type: none"> <li>• Hard mesotrophic oligo-mesotrophic waters with benthic vegetation of Chara spp.</li> <li>• Alkaline fens</li> </ul>	No supplementary conservation advice available	<ul style="list-style-type: none"> <li>• Athlone Mullingar</li> <li>• Mullingar Tullamore</li> <li>• Longford Mullingar</li> </ul>	to	County Westmeath	(NPWS, 2022)
Lough Ennell SPA (004044)	•	<ul style="list-style-type: none"> <li>• Pochard</li> <li>• Tufted duck</li> <li>• Coot</li> <li>• Wetland waterbirds</li> </ul>	and	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> </ul>	to	County Westmeath	(NPWS, 2022) (Office of the Attorney General, 2011)

- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.

Lough Eske and Ardnamona •  
Wood SAC (000163)

- Oligotrophic waters containing very few minerals of sandy plains
- Petrifying springs with tufa formation
- Old sessile oak woods with Ilex and
- Reclamation, including infilling.
- Stocking or re-stocking with fish.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.

Letterkenny Sligo to County Donegal

(NPWS, 2022)  
(Office of the Attorney General, 2018)

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| <ul style="list-style-type: none"> <li>• Blechnum in the British Isles</li> <li>• Freshwater mussel</li> <li>• Salmon</li> <li>• Killarney fern</li> </ul> | <ul style="list-style-type: none"> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]</li> <li>• Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]</li> <li>• Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m</li> </ul> |
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- from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Entry of livestock or machinery into stretches of river containing, or upstream from, freshwater pearl mussel.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of



		commercial recreational/visitor facilities or organised recreational activities.			
Lough Fingall Complex SAC • (000606)	<ul style="list-style-type: none"> <li>• Turloughs</li> <li>• Alpine and Boreal heaths</li> <li>• Juniperus communis formations on heaths or calcareous grasslands</li> <li>• Semi-natural dry grasslands and scrubland facies on calcareous substrates (* important orchid sites)</li> <li>• Calcareous fens with Cladium mariscus and species of the Caricion davallianae</li> <li>• Limestone pavements</li> <li>• Lesser Horseshoe Bat</li> </ul>	No supplementary conservation advice available	• Galway to Ennis	County Galway	(NPWS, 2022)
Lough Forbes Complex SAC • (001818)	<ul style="list-style-type: none"> <li>• Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation</li> <li>• Active raised bogs</li> <li>• Degraded raised bogs still capable of natural regeneration</li> <li>• Depressions on peat substrates of the Rhynchosporion</li> <li>• Alluvial forests with Alnus glutinosa and Fraxinus excelsior</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Stocking or re-stocking with fish.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• All activities relating to turf cutting and/or peat extraction.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> </ul>	<ul style="list-style-type: none"> <li>• Longford to Cavan</li> <li>• Roscommon to Longford</li> <li>• Castlebar to Longford</li> <li>• Athlone to Longford</li> <li>• Longford to Sligo</li> </ul>	County Longford, County Roscommon	(NPWS, 2022) (Office of the Attorney General, 2017)

- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded

grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on

established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Lough Gash Turlough SAC  
(000051)

Turloughs  
Rivers with muddy  
banks with  
Chenopodium rubri p.p.  
and Bidention p.p.  
vegetation

Reclamation, including infilling.  
Stocking or re-stocking with fish.  
Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.  
Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]  
Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]  
Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.  
Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]  
Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]  
Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is

Ennis to Limerick County Clare (NPWS, 2022)  
(Office of the Attorney General, 2018)

not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland

or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

Changing of agricultural use from hay meadow to any other use.

Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.

Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.

Water abstraction, sinking of boreholes and wells.

Planting of trees or multi-annual bioenergy crops.

Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

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Lough Gill SAC (001976)	•	• Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	• No supplementary conservation advice available	• Letterkenny Sligo to Sligo Enniskillen Sligo to Ballina	• to County Sligo (NPWS, 2022)
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- Semi-natural dry grasslands and scrubland facies on calcareous substrates (\* important orchid sites)
  - Old sessile oak woods with Ilex and Blechnum in the British Isles
  - Alluvial forests with Alnus glutinosa and Fraxinus excelsior
  - White-clawed Crayfish
  - Sea Lamprey
  - Brook Lamprey
  - River Lamprey
  - Salmon
  - Otter
- Longford to Sligo

<p>Lough Hoe Bog SAC (000633)</p>	<p>Oligotrophic waters containing very few minerals of sandy plains Blanket bogs (* if active bog) Geyer's Whorl Snail White-clawed Crayfish</p>	<p>Reclamation, including infilling. Stocking or re-stocking with fish. Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment. Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.] Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of</p>	<p>Sligo to Ballina</p>	<p>County Sligo</p>	<p>(NPWS, 2022) (The Stationery Office, 2021)</p>
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crops on established reseeded grassland or cultivated land.]

All activities relating to turf cutting and/or peat extraction. [Consent is not required to continue domestic turf cutting from existing turf banks.]

Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.

Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]

Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Applying lime. [Consent is not required for this activity on established reseeded

grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land

provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.

Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.

Water abstraction, sinking of boreholes and wells.

Planting of trees or multi-annual bioenergy crops.

Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

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<p>Lough Melvin SAC (000428)</p>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Stocking or re-stocking with fish.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock,</li> </ul>	<ul style="list-style-type: none"> <li>• Letterkenny Sligo</li> </ul>	<ul style="list-style-type: none"> <li>• to County Leitrim</li> </ul>	<p>(NPWS, 2022) (The Stationery Office, 2021)</p>
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- Molinia meadows on calcareous, peaty or clayey-silt-laden soils
  - Salmon
  - Otter
- minerals, mud, sand, gravel or other sediment.
  - Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
  - Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or

floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater

- than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
  - Changing of agricultural use from hay meadow to any other use.
  - Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
  - Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Water abstraction, sinking of boreholes and wells.
  - Felling of trees or removing timber, including dead wood.
  - Planting of trees or multi-annual bioenergy crops.

- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Lough Nabrickkeagh Bog SAC •  
(000634)

• Blanket bogs (\* if active bog)

- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- All activities relating to turf cutting and/or peat extraction. [Consent is not required to continue domestic turf cutting from existing turf banks.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone

• Sligo to Ballina

County Sligo

(NPWS, 2022)  
(Office of the Attorney General, 2019)

walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]

- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is



greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on

established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

<p>Lough Oughter And Associated Loughs SAC (000007)</p>	<ul style="list-style-type: none"> <li>• Natural lakes with Magnopotamion or Hydrocharition - type vegetation</li> <li>• Bog woodland</li> <li>• Otter</li> </ul>	<p>No supplementary conservation advice available</p>	<ul style="list-style-type: none"> <li>• Armagh to Cavan</li> <li>• Longford to Cavan</li> <li>• Enniskillen to Cavan</li> </ul>	<p>County Cavan</p>	<p>(NPWS, 2022)</p>
<p>Lough Oughter SPA (004049)</p>	<ul style="list-style-type: none"> <li>• Great crested grebe</li> <li>• Whooper swan</li> <li>• Wigeon</li> <li>• Wetland waterbirds and</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> </ul>	<ul style="list-style-type: none"> <li>• Armagh to Cavan</li> <li>• Longford to Cavan</li> <li>• Enniskillen to Cavan</li> </ul>	<p>County Cavan</p>	<p>(NPWS, 2022) (Office of the Attorney General, 2012)</p>

- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells
- Planting of trees or multi-annual bioenergy crops.
- Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.

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Lough Rea SAC (000304)	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	Reclamation, including infilling. Stocking or re-stocking with fish.	Galway to Athlone	County Galway	(NPWS, 2022) (Office of the
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Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.

Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]

Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]

Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]

Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m

Attorney  
General,  
2017)

from a wetland, lake, turlough or pond.]

Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.

Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.

Water abstraction, sinking of boreholes and wells.

Planting of trees or multi-annual bioenergy crops.

Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Lough Rea SPA (004134)	•	<ul style="list-style-type: none"> <li>• Shoveler</li> <li>• Coot</li> <li>• Wetland waterbirds</li> </ul>	and	<ul style="list-style-type: none"> <li>• Any activity that involves the deliberate killing or capture of any species of naturally occurring bird in the wild state, save where a specific derogation within the meaning of Article 9 of the Directive is in place.</li> <li>• The destruction, damage or removal of nests or eggs or any disturbance, particularly during periods of breeding or rearing, save where a specific derogation within the meaning</li> </ul>	Galway to Athlone County Galway	(NPWS, 2022) (Office of the Attorney General, 2010)
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of Article 9 of the Directive is in place.

- The rearing or keeping of birds, the hunting and capture of which is prohibited, save where a specific derogation within the meaning of Article 7 of the Directive is in place.
- Blocking, altering the flow of, or deepening watercourses or wetlands.
- Construction or alteration of tracks, paths, roads, embankments, car parks or access routes.
- Extracting water for irrigation or other purposes.
- Commercial harvesting or burning of reed or willow.
- Introduction (or re-introduction) into the wild of plants or animals or species not currently found in the area.
- Land reclamation or habitat destruction, except for routine maintenance.
- Planting of trees.
- Reclamation or infilling.
- Any other activity of which notice may be given by the Minister from time to time.

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Lough Ree SAC (000440)	•	<ul style="list-style-type: none"> <li>• Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation</li> <li>• Semi-natural dry grasslands and scrubland facies on calcareous substrates</li> </ul>	No supplementary conservation advice available	<ul style="list-style-type: none"> <li>• Athlone Mullingar</li> <li>• Roscommon Longford</li> <li>• Castlebar Longford</li> <li>• Roscommon Athlone</li> </ul>	to	County Roscommon	(NPWS, 2022)
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- (\* important orchid sites)
  - Active raised bogs
  - Degraded raised bogs still capable of natural regeneration
  - Alkaline fens
  - Limestone pavements
  - Bog woodland
  - Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*
  - Otter
- Athlone to Longford
  - Galway to Athlone
  - Limerick to Athlone
  - Athlone to Tulamore

Lough Ree SPA (004064)

•

- Little grebe
  - Whooper swan
  - Wigeon
  - Teal
  - Mallard
  - Shoveler
  - Tufted duck
  - Common scoter
  - Goldeneye
  - Coot
  - Golden plover
  - Lapwing
  - Common tern
  - Wetland waterbirds and
- Reclamation, including infilling.
  - Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.
  - Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
  - Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m
- Athlone to Mullingar
  - Roscommon to Athlone
  - Athlone to Longford
  - Galway to Athlone
  - Limerick to Athlone
  - Athlone to Tulamore
  - Roscommon to Longford
  - Castlebar to Longford

County Roscommon, County Westmeath (NPWS, 2022)  
 (Office of the Attorney General, 2012)



from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
- Developing or consenting to the development or operation of commercial recreational /visitor facilities or activities.

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Lough Swilly SAC (002287)	•	<ul style="list-style-type: none"> <li>• Estuaries</li> <li>• Coastal lagoons</li> <li>• Atlantic salt meadows</li> <li>• Molinia meadows on calcareous, peaty or clayey-silt-laden soils</li> <li>• Old sessile oak woods with Ilex and Blechnum in the British Isles</li> <li>• Otter</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Stocking or re-stocking with fish.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on</li> </ul>	<ul style="list-style-type: none"> <li>• Derry Letterkenny to County Donegal</li> <li>• Buncrana to Letterkenny/Derry</li> <li>• Letterkenny to Sligo</li> <li>• Letterkenny to Strabane</li> </ul>	<p>(NPWS, 2022) (Office of the Attorney General, 2018)</p>
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- established            reseeded  
grassland or cultivated land.]
- Undertaking scientific research involving the collection and removal of biological material.
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established            reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Applying lime. [Consent is not required for this activity on established            reseeded

grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on

established reseeded  
grassland or cultivated land  
provided it is greater than 20m  
from a river, stream or  
floodplain; or greater than  
50m from a wetland, lake,  
turlough or pond.]

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

			<ul style="list-style-type: none"> <li>• Harvesting marine invertebrate species in intertidal areas.</li> <li>• Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.</li> </ul>		
Lough Swilly SPA (004075)	•	<ul style="list-style-type: none"> <li>• Great crested grebe</li> <li>• Grey heron</li> <li>• Whooper swan</li> <li>• Greylag goose</li> <li>• Shelduck</li> <li>• Wigeon</li> <li>• Teal</li> <li>• Mallard</li> <li>• Shoveler</li> <li>• Scaup</li> <li>• Goldeneye</li> <li>• Red-breasted merganser</li> <li>• Coot</li> <li>• Oystercatcher</li> <li>• Knot</li> <li>• Dunlin</li> <li>• Curlew</li> <li>• Redshank</li> <li>• Greenshank</li> <li>• Black-headed gull</li> <li>• Common gull</li> <li>• Sandwich tern</li> <li>• Common tern</li> <li>• Greenland white-fronted goose</li> <li>• Wetland and waterbirds</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]</li> <li>• Drainage works including digging, deepening, widening or blocking a drain, watercourse or water body.</li> <li>• Planting of trees or multi-annual bioenergy crops.</li> <li>• Any activity intended to disturb birds, including by mechanical,</li> </ul>	<ul style="list-style-type: none"> <li>• Derry to County Donegal</li> <li>• Buncrana to Letterkenny/Derry</li> <li>• Letterkenny to Sligo</li> <li>• Letterkenny to Strabane</li> </ul>	<p>(NPWS, 2022) (Office of the Attorney General, 2012)</p>

- air, gas, wind powered or audible means.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Lower River Shannon SAC • (002165)	<ul style="list-style-type: none"> <li>• Sandbanks which are slightly covered by sea water all the time</li> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Coastal lagoons</li> <li>• Large shallow inlets and bays</li> <li>• Reefs</li> <li>• Perennial vegetation of stony banks</li> <li>• Vegetated sea cliffs of the Atlantic and Baltic coasts</li> <li>• Salicornia and other annuals colonising mud and sand</li> <li>• Atlantic salt meadows</li> <li>• Mediterranean salt meadows</li> <li>• Water courses of plain to montane levels with the Ranunculus fluitantis and</li> </ul> No supplementary conservation advice available	<ul style="list-style-type: none"> <li>• Cork to Limerick</li> <li>• Tralee to Limerick</li> <li>• Limerick to Kilkenny</li> <li>• Limerick to Waterford</li> <li>• Limerick to Athlone</li> <li>• Ennis to Limerick</li> <li>• Shannon to Ennis/Limerick</li> <li>• Galway to Ennis</li> <li>• Limerick to Portlaoise</li> </ul> County Kerry (NPWS, 2022)
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- Callitricho-Batrachion vegetation
- Molinia meadows on calcareous, peaty or clayey-silt-laden soils
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*
- Freshwater Pearl Mussel
- Sea Lamprey
- Brook Lamprey
- River Lamprey
- Salmon
- Common Bottlenose Dolphin
- Otter

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Lower River Suir SAC (002137) •

- |   |  |  |
|---|--|--|
| <ul style="list-style-type: none"> <li>• Atlantic salt meadows</li> <li>• Mediterranean salt meadows</li> <li>• Water courses of plain to montane levels with the <i>Ranunculus fluitans</i> and Callitricho-Batrachion vegetation</li> <li>• Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels</li> <li>• Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles</li> <li>• Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i></li> </ul> | No supplementary conservation advice available | <ul style="list-style-type: none"> <li>• Limerick to County Tipperary (NPWS, 2022)</li> <li>• Waterford to Wexford</li> <li>• Limerick to Waterford</li> <li>• Waterford to Tramore</li> <li>• Cork to Waterford</li> <li>• Kilkenny to Waterford</li> <li>• Enniscorthy to Waterford</li> </ul> |
|---|--|--|

- Taxus baccata woods of the British Isles
- Freshwater Pearl Mussel
- White-clawed Crayfish
- Sea Lamprey
- Brook Lamprey
- River Lamprey
- Twaite Shad
- Salmon
- Otter

Malahide Estuary SAC (000205) •

- |  |   |   |  |
|--|---|---|--|
| <ul style="list-style-type: none"> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Salicornia and other annuals colonising mud and sand</li> <li>• Atlantic salt meadows</li> <li>• Mediterranean salt meadows</li> <li>• Shifting dunes along the shoreline with Ammophila arenaria (white dunes)</li> <li>• Fixed coastal dunes with herbaceous vegetation (grey dunes)</li> </ul> | <ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Undertaking scientific research involving the collection and removal of biological material.</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> </ul> | <ul style="list-style-type: none"> <li>• Balbrigan to County Swords</li> <li>• Navan to Swords</li> <li>• Swords to Dublin</li> <li>• Swords to Malahide</li> </ul> | <p>(NPWS, 2022)<br/>(Office of the Attorney General, 2019)</p> |
|--|---|---|--|



- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or

cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded

grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Using or permitting the use of land for car parking where it may damage the vegetation, soil or substrate.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

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<p>Malahide Estuary SPA (004025) •</p>	<ul style="list-style-type: none"> <li>• Great crested grebe</li> <li>• Light-bellied brent goose</li> <li>• Shelduck</li> <li>• Pintail</li> <li>• Goldeneye</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not</li> </ul>	<ul style="list-style-type: none"> <li>• Balbrigan to County Swords</li> <li>• Navan to Swords</li> <li>• Swords to Dublin</li> <li>• Swords to Malahide</li> </ul>	<p>Dublin</p>	<p>(NPWS, 2022) (Office of the Attorney General, 2011)</p>
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- Red-breasted merganser
  - Oystercatcher
  - Golden plover
  - Grey plover
  - Knot
  - Dunlin
  - Black-tailed godwit
  - Bar-tailed godwit
  - Redshank
  - Wetland waterbirds
- and
- required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Burning, topping, clearing scrub or rough vegetation or reseeding. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Planting of trees or multi-annual bioenergy crops.
  - Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
  - Developing or allowing the development or operation of recreational/ visitor facilities or activities, at a commercial scale.
  - Harvesting marine invertebrate species in intertidal areas.
  - Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Middle Shannon Callows SPA •  
(004096)

- Whooper swan
- Wigeon

• Reclamation, including infilling.

• Athlone Mullingar

to County Offaly (NPWS, 2022)

- Corncrake
  - Golden Plover
  - Lapwing
  - Black-tailed godwit
  - Black-headed gull
  - Wetland and waterbirds
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
  - Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
  - Mowing of grass crops. [Consent is not required unless notice has been given that mowing on specified lands is likely to interfere with the
- Roscommon the
  - Athlone to
  - Longford
  - Galway to Athlone
  - Limerick to Athlone
  - Athlone to
  - Tulamore

(Office of the Attorney General, 2012)

				breeding and reproduction of corncrakes during the period specified in the said notice.]				
				<ul style="list-style-type: none"> <li>• Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.</li> <li>• Water abstraction, sinking of boreholes and wells.</li> <li>• Planting of trees or multi-annual bioenergy crops.</li> <li>• Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.</li> <li>• Developing or consenting to the development or operation of commercial recreational /visitor facilities or activities.</li> </ul>				
Mid-Waterford (004193)	Coast	SPA •	<ul style="list-style-type: none"> <li>• Cormorant</li> <li>• Peregrine</li> <li>• Herring gull</li> <li>• Chough</li> </ul>	<ul style="list-style-type: none"> <li>• Construction, removal or alteration of fences, stone walls, embankments or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]</li> </ul>	•	Cork to Waterford	County Waterford	(NPWS, 2022) (Office of the Attorney General, 2011)
Moanveanlagh (002351)	Bog	SAC •	<ul style="list-style-type: none"> <li>• Active raised bogs</li> <li>• Degraded raised bogs still capable of natural regeneration</li> <li>• Depressions on peat substrates of the Rhynchosporion</li> </ul>	No supplementary conservation advice available	•	Tralee to Limerick	County Kerry	(NPWS, 2022)
Mongan Bog SAC (000580)			Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120]	<ul style="list-style-type: none"> <li>• Reclamation, including infilling</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment</li> <li>• All activities relating to turf cutting and/or peat extraction.</li> </ul>	•	Limerick Athlone	to County Offaly	(NPWS, 2022) (Office of the Attorney
					•	Athlone Tulamore	to	General, 2011)

Depressions on  
substrates of  
Rhynchosporion

peat  
the

- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

General,  
2017)

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Mongan Bog SPA (004017)	•	<ul style="list-style-type: none"> <li>• Greenland white-fronted goose</li> </ul>	No	<ul style="list-style-type: none"> <li>• supplementary conservation advice available</li> </ul>	<ul style="list-style-type: none"> <li>• Limerick to Athlone</li> <li>• Athlone to Tulamore</li> </ul>	County Offaly	(NPWS, 2022)
Mount Hevey Bog SAC (002342)	•	<ul style="list-style-type: none"> <li>• Active raised bogs</li> <li>• Degraded raised bogs still capable of natural regeneration</li> <li>• Depressions on peat substrates of the Rhynchosporion</li> </ul>	•	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• All activities relating to turf cutting and/or peat extraction.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for</li> </ul>	<ul style="list-style-type: none"> <li>• Navan Mullingar</li> <li>• Mullingar Edenderry</li> <li>• Mullingar Maynooth</li> </ul>	to County Meath, to County Westmeath	(NPWS, 2022) (Office of the Attorney General, 2017)



- harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m

- from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m

from a wetland, lake, turlough or pond.]

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Mount Jessop Bog SAC (002202)	•	<ul style="list-style-type: none"> <li>• Degraded raised bogs still capable of natural regeneration</li> <li>• Bog woodland</li> </ul>	No supplementary advice available	conservation	•	Longford Mullingar	to County Longford	(NPWS, 2022)
Moyclare Bog SAC (000581)	•	<ul style="list-style-type: none"> <li>• Active raised bogs</li> </ul>	•	Reclamation, infilling.	including	•	Athlone Tulamore	to County Offaly (NPWS, 2022)

- Degraded raised bogs still capable of natural regeneration
- Depressions on peat substrates of the Rhynchosporion
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- All activities relating to turf cutting and/or peat extraction.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or

(Office of the Attorney General, 2017)

greater than 50m from a wetland, lake, turlough or pond.]

- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or

greater than 50m from a wetland, lake, turlough or pond.]

- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial

<p>Moyree River System SAC • (000057)</p>	<ul style="list-style-type: none"> <li>• Water courses of plain to montane levels with the Ranunculus fluitans and Callitriche-Batrachion vegetation</li> <li>• Alkaline fens</li> <li>• Limestone pavements</li> <li>• Caves not open to the public</li> <li>• Lesser Horseshoe bat</li> <li>• Otter</li> </ul>	<p>recreational/visitor facilities or organised recreational activities.</p>	<ul style="list-style-type: none"> <li>• Galway to Ennis County Clare</li> </ul>	<p>(NPWS, 2022) (Office of the Attorney General, 2019)</p>
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wetland, lake, turlough or pond.]

- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m



- from a wetland, lake, turlough or pond.]
- Modification of caves and/or their entrances.
  - Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
  - Grazing of livestock between 1st April and 31st October on traditional winterages.

- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Alteration, renovation or removal of buildings, ruins or other structures.
- Lighting up caves, buildings or other places used by bats for roosts.

Mullaghanish to Musheramore •  
Mountains SPA (004162)

- Hen harrier

- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Agricultural improvement of heath or bog.
- Off-road recreational use of mechanically propelled vehicles.

• Cork to Tralee

County Cork

(NPWS, 2022)  
(Office of the Attorney General, 2011)

Newhall and Edenvale Complex •  
SAC (002091)

- Caves not open to the public
- Lesser Horseshoe Bat
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not

Ennis to Limerick County Clare (NPWS, 2022)  
(Office of the Attorney General, 2017)

required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Modification of caves and/or their entrances.
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Alteration, renovation or removal of buildings, ruins or other structures.
- Lighting up caves, buildings or other places used by bats for roosts.

Old Farm Buildings, •  
Ballymacrogan SAC (002245)

- Lesser Horseshoe Bat • Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Felling of trees or removing timber, including dead wood.

Galway to Ennis County Clare (NPWS, 2022)  
(Office of the Attorney General, 2016)

- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Alteration, renovation or removal of buildings, ruins or other structures.
- Lighting up caves, buildings or other places used by bats for roosts.

Ox Mountains Bogs SAC •  
(002006)

- Oligotrophic waters containing very few minerals of sandy plains
- Natural dystrophic lakes and ponds
- Northern Atlantic wet heaths with Erica tetralix
- European dry heaths
- Blanket bogs (\* if active bog)
- Transition mires and quaking bogs
- Depressions on peat substrates of the Rhynchosporion
- Geyer's Whorl Snail
- Marsh Saxifrage
- Reclamation, including infilling.
- Stocking or re-stocking with fish.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- All activities relating to turf cutting and/or peat extraction. [Consent is not required to continue domestic turf cutting from existing turf banks.]

Sligo to Ballina

County Sligo

(NPWS, 2022)  
(The Stationery Office, 2021)

- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake,
- turlough or pond.]

- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]



- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Pilgrim's Road Esker SAC • (001776)	<ul style="list-style-type: none"> <li>• Semi-natural dry grasslands and scrubland facies on calcareous substrates (* important orchid sites)</li> </ul>	<ul style="list-style-type: none"> <li>• No supplementary conservation advice available</li> <li>• Limerick Athlone</li> <li>• Athlone Tulamore</li> </ul>	to County Offaly (NPWS, 2022)
Pollardstown Fen SAC (000396) •	<ul style="list-style-type: none"> <li>• Calcareous fens with Cladium mariscus and species of the Caricion davallianae</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Stocking or re-stocking with fish.</li> </ul>	<ul style="list-style-type: none"> <li>• Portlaoise Newbridge</li> </ul> to County Kildare (NPWS, 2022) (Office of the Attorney

- Petrifying springs with tufa formation (Cratoneurion)
  - Alkaline fens
  - *Vertigo geyeri* (Geyer's Whorl Snail)
  - *Vertigo angustior* (Narrow-mouthed Whorl Snail)
  - *Vertigo moulinsiana* (Desmoulin's Whorl Snail)
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
  - Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
  - Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these

General,  
2018)

activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Poulaphouca Reservoir SPA •  
(004063)

- Greylag goose
- Lesser black-backed gull
- Any activity that involves the deliberate killing or capture of any species of naturally occurring bird in the wild state, save where a specific derogation within the meaning of Article 9 of the Directive is in place.
- The destruction, damage or removal of nests or eggs or any disturbance particularly during periods of breeding or rearing, save where a specific derogation within the meaning of Article 9 of the Directive is in place.
- The rearing or keeping of birds, the hunting and capture of which is prohibited, save where a specific derogation within the meaning of Article 7 of the Directive is in place.
- Altering watercourses or wetlands, including changing the height of the water table, blocking or altering the flow of the water or deepening any channel.
- Construction or alteration of tracks, paths, roads, embankments, car parks or access routes, or the use of car parking.
- Developing, operating or allowing leisure or sporting activities liable to cause significant disturbance to those birds listed in Schedule 3 of these Regulations or damage to their habitats.

Naas Blessington to County Wicklow

(NPWS, 2022)  
(Office of the Attorney General, 2010)

- Any activity intended to disturb those birds listed in Schedule 3 of these Regulations including by mechanical, air or wind powered or audible means.
- Extracting water for irrigation or other purposes.
- Burning or commercial harvesting of reed or willow.
- Introduction (or re-introduction) into the wild of plants or animals not currently found in the area.
- Any activity which destroys habitat, except normal maintenance activities as defined in approved farm plans.
- Reclaiming land for agricultural purposes, including spraying or burning vegetation, clearing scrub and rough vegetation, draining or moving soil, ploughing, harrowing or reseeded.
- Planting of trees.
- Reclamation or infilling.
- Any other activity of which notice may be given by the Minister from time to time.

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Rahasane (000322)	Turlough	SAC •	• Turloughs	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for</li> </ul>	• Galway to Athlone County Galway	(NPWS, 2022) (Office of the Attorney General, 2017)
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- harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m



- from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
  - Changing of agricultural use from hay meadow to any other use.
  - Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
  - Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Water abstraction, sinking of boreholes and wells.
  - Planting of trees or multi-annual bioenergy crops.
  - Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Rahasane (004089)	Turlough	SPA •	<ul style="list-style-type: none"> <li>• Whooper swan</li> <li>• Wigeon</li> <li>• Golden plover</li> <li>• Black-tailed godwit</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> </ul>	Galway to Athlone	County Galway	(NPWS, 2022) (Office of the Attorney
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- Greenland fronted goose
  - Wetland waterbirds
- while- and
- Introduction or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Water abstraction, sinking of boreholes and wells.
  - Planting of trees or multi-annual bioenergy crops.
  - Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
  - Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.

General,  
2012)

Red Bog, Kildare SAC (000397) •

- Transition mires and quaking bogs
- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or

Naas Blessington to County Kildare

(NPWS, 2022)  
(Office of the

disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.

Attorney  
General,  
2018)

- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

<p>Redwood Bog SAC (002353) •</p>	<ul style="list-style-type: none"> <li>• Active raised bogs [7110]</li> <li>• Degraded raised bogs still capable of natural regeneration [7120]</li> <li>• Depressions on peat substrates of the Rhynchosporion             <ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• All activities relating to turf cutting and/or peat extraction.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]</li> <li>• Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or</li> </ul> </li> </ul>	<p>Limerick Athlone</p>	<p>to County Tipperary</p>	<p>(NPWS, 2022) (The Stationery Office, 2021)</p>
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cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or

cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.



- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

River Barrow and River Nore • SAC (002162)	<ul style="list-style-type: none"> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Reefs</li> <li>• Salicornia and other annuals colonising mud and sand</li> <li>• Atlantic salt meadows</li> <li>• Mediterranean salt meadows</li> <li>• Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation</li> <li>• European dry heaths</li> <li>• Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels</li> <li>• Petrifying springs with tufa formation</li> <li>• Old sessile oak woods with Ilex and Blechnum in the British Isles</li> <li>• Alluvial forests with Alnus glutinosa and Fraxinus excelsior</li> <li>• Desmoulin's Whorl Snail</li> </ul>	No supplementary conservation advice available	<ul style="list-style-type: none"> <li>• Portlaoise Newbridge to Carlow</li> <li>• Portlaoise to Carlow to Aklow</li> <li>• Limerick to Kilkenny</li> <li>• Waterford to Wexford</li> <li>• Kilkenny to Enniscorthy</li> <li>• Tullamore to Portlaoise</li> <li>• Edenderry to Portlaoise</li> <li>• Kilkenny to Portlaoise</li> <li>• Limerick to Portlaoise</li> <li>• Kilkenny to Waterford</li> <li>• Kilkenny to Carlow</li> <li>• Enniscorthy to Waterford</li> </ul>	to County Kilkenny	(NPWS, 2022)
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- Freshwater Pearl Mussel
- White-clawed Crayfish
- Sea Lamprey
- Brook Lamprey
- River Lamprey
- Twaité Shad
- Salmon
- Otter
- Killarney Fern
- Nore Pearl Mussel

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River Boyne and River Blackwater SAC (002299) •	<ul style="list-style-type: none"> <li>• Alkaline fens</li> <li>• Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i></li> <li>• River Lamprey</li> <li>• Salmon</li> <li>• Otter</li> </ul>	No supplementary conservation advice available	<ul style="list-style-type: none"> <li>• Navan Drogheda to County Meath (NPWS, 2022)</li> <li>• Dundalk Drogheda to</li> <li>• Drogheda Balbriggan to</li> <li>• Navan to Swords</li> <li>• Navan to Mullingar</li> <li>• Mullingar Edenderry to</li> <li>• Mullingar Maynooth to</li> <li>• Cavan to Navan</li> </ul>
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River Boyne and River Blackwater SPA (004232) •	<ul style="list-style-type: none"> <li>• Kingfisher</li> </ul>	<ul style="list-style-type: none"> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land].</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m</li> </ul>	<ul style="list-style-type: none"> <li>• Navan Mullingar to County Meath, County Westmeath (NPWS, 2022) (Office of the Attorney General, 2012)</li> <li>• Mullingar Edenderry to</li> <li>• Mullingar Maynooth to</li> <li>• Navan Drogheda to</li> <li>• Navan to Swords</li> <li>• Cavan to Navan</li> </ul>
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from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Works on, or alteration to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.

River Finn SAC (002301)	•	<ul style="list-style-type: none"> <li>• Oligotrophic waters containing very few minerals of sandy plains</li> <li>• Northern Atlantic wet heaths with Erica tetralix</li> <li>• Blanket bogs (* if active bog)</li> <li>• Transition mires and quaking bogs</li> <li>• Salmon</li> <li>• Otter</li> </ul>	No supplementary conservation advice available	<ul style="list-style-type: none"> <li>• Derry to Strabane</li> <li>• Letterkenny to Sligo</li> <li>• Letterkenny to Strabane</li> </ul>	County Donegal	(NPWS, 2022)
River Little Brosna Callows SPA (004086)	•	<ul style="list-style-type: none"> <li>• Whooper swan</li> <li>• Wigeon</li> <li>• Teal</li> <li>• Pintail</li> <li>• Shoveler</li> <li>• Golden plover</li> <li>• Lapwing</li> <li>• Black-tailed godwit</li> <li>• Black-headed gull</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of</li> </ul>	Limerick to Athlone	County Tipperary	(NPWS, 2022) (Office of the Attorney General, 2011)

- Greenland white-fronted goose
  - Wetland waterbirds and
- crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Burning, topping, clearing scrub or rough vegetation or reseeding. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Water abstraction, sinking of boreholes and wells.
  - Planting of trees or multi-annual bioenergy crops.
  - Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
  - Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.

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River Moy SAC (002298)	•	<ul style="list-style-type: none"> <li>• Lowland hay meadows</li> <li>• Active raised bogs</li> <li>• Degraded raised bogs still capable of natural regeneration</li> </ul>	No supplementary conservation advice available	<ul style="list-style-type: none"> <li>• Castlebar Longford to County Mayo</li> <li>• Galway to Castlebar</li> <li>• Sligo to Ballina</li> <li>• Ballina to Castlebar</li> </ul>	(NPWS, 2022)
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- Depressions on peat substrates of the Rhynchosporion
- Alkaline fens
- Old sessile oak woods with Ilex and Blechnum in the British Isles
- Alluvial forests with Alnus glutinosa and Fraxinus excelsior
- White-clawed Crayfish
- Sea Lamprey
- Brook Lamprey
- Salmon
- Otter

River Nanny Estuary and Shore SPA (004158) •

- Oystercatcher
- Ringed plover
- Golden plover
- Knot
- Sanderling
- Herring gull
- Wetland waterbirds and
- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land

• Drogheda Balbriggan to County Meath (NPWS, 2022) (Office of the Attorney General, 2012)

provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

River Nore SPA (004233)	•	• Kingfisher	<ul style="list-style-type: none"> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]</li> <li>• Works on, or alteration to, the banks, bed or flow of a drain, watercourse or waterbody.</li> </ul>	<ul style="list-style-type: none"> <li>• Limerick to County</li> <li>• Kilkenny to Kilkenny</li> <li>• Kilkenny to Enniscorthy</li> <li>• Kilkenny to Portlaoise</li> <li>• Kilkenny to Waterford</li> <li>• Kilkenny to Carlow</li> </ul>	to County Kilkenny	(NPWS, 2022) (Office of the Attorney General, 2012)
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			<ul style="list-style-type: none"> <li>• Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.</li> <li>• Water abstraction, sinking of boreholes and wells.</li> <li>• Felling of trees or removing timber, including dead wood.</li> </ul>	
<p>River Shannon and River Fergus Estuaries SPA (004077)</p>	<ul style="list-style-type: none"> <li>• Cormorant</li> <li>• Whooper swan</li> <li>• Light-bellied goose</li> <li>• Shelduck</li> <li>• Wigeon</li> <li>• Teal</li> <li>• Pintail</li> <li>• Shoveler</li> <li>• Scaup</li> <li>• Ringed plover</li> <li>• Golden plover</li> <li>• Grey plover</li> <li>• Lapwing</li> <li>• Knot</li> <li>• Dunlin</li> <li>• Black-tailed godwit</li> <li>• Bar-tailed godwit</li> <li>• Curlew</li> <li>• Redshank</li> <li>• Greenshank</li> <li>• Black-headed gull</li> <li>• Wetland waterbirds</li> </ul>	<p>brent</p> <p>and</p>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]</li> <li>• Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.</li> <li>• Felling of trees or removing timber, including dead wood.</li> </ul>	<ul style="list-style-type: none"> <li>• Cork to Limerick</li> <li>• Tralee to Limerick</li> <li>• Limerick to Athlone</li> <li>• Ennis to Limerick</li> <li>• Shannon to Ennis/Limerick</li> <li>• Limerick to Portlaoise</li> </ul> <p>County Clare, County Kerry, County Limerick</p> <p>(NPWS, 2022)</p> <p>Office of the Attorney General, 2019)</p>

- Planting of trees or multi-annual bioenergy crops.
- Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

River Shannon Callows SAC •  
(000216)

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| <ul style="list-style-type: none"> <li>• Molinia meadows on calcareous, peaty or clayey-silt-laden soils</li> <li>• Lowland hay meadows</li> <li>• Alkaline fens</li> <li>• Limestone pavements</li> <li>• Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i></li> <li>• Otter</li> </ul> | <ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> </ul> | <ul style="list-style-type: none"> <li>• Athlone Mullingar to County Offaly (NPWS, 2022)</li> <li>• Roscommon to (The Stationery Office, 2021)</li> <li>• Athlone to Longford</li> <li>• Galway to Athlone</li> <li>• Limerick to Athlone</li> <li>• Athlone to Tulamore</li> </ul> |
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- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established

- reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Significant changes in livestock density (including introduction of grazing),

changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

- Grazing of livestock between 1st April and 31st October on traditional winterages.
- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

River Suck Callows SPA •  
(004097)

- Whooper swan
- Wigeon
- Golden plover
- Lapwing

- Reclamation, including infilling.
- Introduction or re-introduction, of plants or animals not found in the area. (Consent is not required for the planting of

Galway to Athlone County Roscommon (NPWS, 2022)  
Limerick to Athlone to (Office of the Attorney  
Athlone to Tulamore

- Greenland fronted goose
  - Wetland waterbirds
- white- and
- crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Burning, topping, clearing scrub or rough vegetation or reseeding. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond]
  - Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Water abstraction, sinking of boreholes and wells.
  - Planting of trees or multi-annual bioenergy crops.
  - Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
  - Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.

General,  
2012)

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Rockabill SPA (004014)	•	<ul style="list-style-type: none"> <li>• Purple Sandpiper</li> <li>• Roseate tern</li> <li>• Common tern</li> <li>• Arctic tern</li> </ul>	<ul style="list-style-type: none"> <li>• Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of</li> </ul>	• Balbrigan Swords	to County Dublin	(NPWS, 2022) (Office of the Attorney General, 2012)
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		<ul style="list-style-type: none"> <li>crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.</li> </ul>		
<p>Rockabill to Dalkey Island SAC (003000)</p>	<ul style="list-style-type: none"> <li>• Reefs</li> <li>• Harbour Porpoise</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Undertaking scientific research involving the collection and removal of biological material.</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded</li> </ul>	<ul style="list-style-type: none"> <li>• Balbrigan to County Swords Dublin</li> <li>• Bray to Dublin</li> </ul>	<p>(NPWS, 2022) (Office of the Attorney General, 2019)</p>

grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Undertaking active acoustic surveys in the marine environment.

				<ul style="list-style-type: none"> <li>• Harvesting marine invertebrate species in intertidal areas.</li> <li>• Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.</li> </ul>		
Rogerstown (000208)	Estuary SAC	<p>Estuaries</p> <p>Mudflats and sandflats not covered by seawater at low tide</p> <p>Salicornia and other annuals colonising mud and sand</p> <p>Atlantic salt meadows</p> <p>Mediterranean salt meadows</p> <p>Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)</p> <p>Fixed coastal dunes with herbaceous vegetation (grey dunes)</p>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Undertaking scientific research involving the collection and removal of biological material.</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]</li> </ul>	Balbrigan Swords	to County Dublin	(NPWS, 2022) (Office of the Attorney General, 2018)

- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]



- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given

- that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
  - Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Planting of trees or multi-annual bioenergy crops.
  - Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
  - Using or permitting the use of land for car parking where it may damage the vegetation, soil or substrate.
  - Harvesting marine invertebrate species in intertidal areas.
  - Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Rogerstown (004015)	Estuary	SPA •	<ul style="list-style-type: none"> <li>• Greylag goose</li> <li>• Light-bellied goose</li> <li>• Shelduck</li> <li>• Shoveler</li> <li>• Oystercatcher</li> <li>• Ringed plover</li> <li>• Grey plover</li> <li>• Knot</li> <li>• Dunlin</li> </ul>	<ul style="list-style-type: none"> <li>• Any activity that involves the deliberate killing or capture of any species of naturally occurring bird in the wild state, save where a specific derogation within the meaning of Article 9 of the Directive is in place.</li> <li>• The destruction, damage or removal of nests or eggs or any disturbance, particularly during periods of breeding or rearing,</li> </ul>	Balbrigan Swords	to County Dublin	(NPWS, 2022) (Office of the Attorney General, 2010)
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- Black-tailed godwit
  - Redshank
  - Wetland waterbirds
- and
- save where a specific derogation within the meaning of Article 9 of the Directive is in place.
- The rearing or keeping of birds, the hunting and capture of which is prohibited, save where a specific derogation within the meaning of Article 7 of the Directive is in place.
  - Altering watercourses or wetlands, including changing the height of the water table, blocking or altering the flow of the water or deepening any channel.
  - Developing, operating or allowing leisure or sporting activities liable to cause significant disturbance to those birds listed in Schedule 3 of these Regulations or damage to their habitats.
  - Any activity intended to disturb those birds listed in Schedule 3 of these Regulations including by mechanical, air or wind powered or audible means.
  - Use of off-road recreational vehicles, other than by a landowner or on a public road or a non-public road serving forests or woodlands.
  - Harvesting marine species, unless for personal use not exceeding certain limits as may be set by the Minister from time to time.
  - Construction or alteration of tracks, paths, roads, embankments, car parks or

- access routes, or using or permitting the use of land for car parking.
- Planting of trees.
- Reclamation or infilling.
- Removal of soil, mud, sand, gravel, rock or minerals.
- Dredging whether for fishing or other purposes
- Introduction (or re-introduction) into the wild of plants or animals not currently found in the area.
- Any activity which destroys habitat, except normal maintenance activities as defined in approved farm plans.
- Reclaiming land for agricultural purposes, including spraying or burning vegetation, clearing scrub and rough vegetation, draining or moving soil, ploughing, harrowing or reseedling.
- Any other activity of which notice may be given by the Minister from time to time.

Rye Water Valley/Carton SAC • (001398)	<ul style="list-style-type: none"> <li>• Petrifying springs with tufa formation</li> <li>• Narrow-mouthed Whorl Snail</li> <li>• Desmoulin's Whorl Snail</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Stocking or re-stocking with fish.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for</li> </ul>	<ul style="list-style-type: none"> <li>• Dunboyne Maynooth</li> <li>• Dunboyne Leixlip</li> <li>• Dublin to Leixlip</li> <li>• Leixlip Cellbridge</li> <li>• Maynooth Cellbridge</li> <li>• Mullingar Maynooth</li> </ul>	<ul style="list-style-type: none"> <li>to County Kildare,</li> <li>to County Meath</li> <li>to</li> <li>to</li> <li>to</li> </ul>	(NPWS, 2022) (Office of the Attorney General, 2018)
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- harvesting of cultivated crops, or for grazing or mowing.]
- Maynooth to Leixlip
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m

from a wetland, lake, turlough or pond.]

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Sheheree (Ardagh) Bog SAC • (000382)	<ul style="list-style-type: none"> <li>• Active raised bogs</li> <li>• Degraded raised bogs still capable of natural regeneration</li> </ul>	No supplementary conservation advice available	• Cork to Tralee	County Kerry	(NPWS, 2022)
Skerries Islands SPA (004122) •	<ul style="list-style-type: none"> <li>• Cormorant</li> <li>• Shag</li> <li>• Light-bellied brent goose</li> </ul>	• Any activity that involves the deliberate killing or capture of any species of naturally occurring bird in the wild state, save where a specific	• Balbrigan Swords	to County Dublin	(NPWS, 2022) (Office of the

- Purple sandpiper
  - Turnstone
  - Herring gull
- derogation within the meaning of Article 9 of the Directive is in place.
- The destruction, damage or removal of nests or eggs or any disturbance, particularly during periods of breeding or rearing, save where a specific derogation within the meaning of Article 9 of the Directive is in place.
  - The rearing or keeping of birds, the hunting and capture of which is prohibited, save where a specific derogation within the meaning of Article 7 of the Directive is in place.
  - Altering watercourses or wetlands, including changing the height of the water table, blocking or altering the flow of the water or deepening any channel.
  - Burning areas of vegetation.
  - Developing, operating or allowing leisure or sporting activities liable to cause significant disturbance to those birds listed in Schedule 3 of these Regulations or damage to their habitats.
  - Any activity intended to disturb those birds listed in Schedule 3 of these Regulations including by mechanical, air or wind powered or audible means.
  - Harvesting of marine species, unless for personal use not exceeding certain limits as may be set by the Minister from time to time.

Attorney  
General,  
2010)



- Construction or alteration of tracks, paths, roads, embankments, car parks or access routes, or using or permitting the use of land for car parking.
- Planting of trees.
- Reclamation or infilling.
- Removal of soil, mud, sand, gravel, rock or minerals.
- Fishing by any type of nets.
- Dredging whether for fishing or other purposes.
- Introduction (or re-introduction) into the wild of plants or animals not currently found in the area.
- Grazing of livestock above a recommended density and period as defined in approved farm plans.
- Any activity which destroys habitat, except normal maintenance activities as defined in approved farm plans.
- Reclaiming land for agricultural purposes, including spraying or burning vegetation, clearing scrub and rough vegetation, draining or moving soil, ploughing, harrowing or reseeding.
- Any other activity of which notice may be given by the Minister from time to time.

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Slaney River Valley SAC • (000781)	<ul style="list-style-type: none"> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Atlantic salt meadows</li> </ul>	No supplementary conservation • advice available	Carlow to Aklow	County Carlow	(NPWS, 2022)
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- Mediterranean salt meadows
- Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation
- Old sessile oak woods with Ilex and Blechnum in the British Isles
- Alluvial forests with Alnus glutinosa and Fraxinus excelsior
- Freshwater Pearl Mussel
- Sea Lamprey
- Brook Lamprey
- River Lamprey
- Twaité Shad
- Salmon
- Otter
- Harbour Seal

Slaney River Valley SAC • (000781)

- |  |   |  |                     |
|--|---|--|---------------------|
| <ul style="list-style-type: none"> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Atlantic salt meadows</li> <li>• Mediterranean salt meadows</li> <li>• Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation</li> </ul> | <p>No supplementary conservation advice available</p> | <ul style="list-style-type: none"> <li>• Enniscorthy Wicklow to County Wexford</li> <li>• Enniscorthy to Wexford</li> <li>• Waterford to Wexford</li> <li>• Kilkenny to Enniscorthy</li> <li>• Wexford to Rosslare Europort</li> <li>• Enniscorthy to Waterford</li> </ul> | <p>(NPWS, 2022)</p> |
|--|---|--|---------------------|

- Old sessile oak woods with Ilex and Blechnum in the British Isles
- Alluvial forests with Alnus glutinosa and Fraxinus excelsior
- Freshwater Pearl Mussel
- Sea Lamprey
- Brook Lamprey
- River Lamprey
- Twait Shad
- Salmon
- Otter
- Harbour Seal

<p>Slieve Bloom Mountains SAC • (000412)</p>	<ul style="list-style-type: none"> <li>• Northern Atlantic wet heaths with Erica tetralix</li> <li>• Blanket bogs (* if active bog)</li> <li>• Alluvial forests with Alnus glutinosa and Fraxinus excelsior</li> </ul>	<p>No supplementary conservation advice available</p>	<p>Limerick Portlaoise to County Laois (NPWS, 2022)</p>
<p>Slieve Bloom Mountains SPA • (004160)</p>	<ul style="list-style-type: none"> <li>• Hen harrier</li> </ul>	<ul style="list-style-type: none"> <li>• Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]</li> <li>• Agricultural improvement of heath or bog.</li> <li>• Off-road recreational use of mechanically propelled vehicles.</li> </ul>	<p>Limerick Portlaoise to County Offaly (NPWS, 2022) (Office of the Attorney General, 2012)</p>

Slieve Mish Mountains SAC •  
(002185)

- Northern Atlantic wet heaths with Erica tetralix
- European dry heaths
- Alpine and Boreal heaths
- Blanket bogs (\* if active bog)
- Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)
- Calcareous rocky slopes with chasmophytic vegetation
- Siliceous rocky slopes with chasmophytic vegetation
- Trichomanes speciosum (Killarney Fern)
- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- All activities relating to turf cutting and/or peat extraction. [Consent is not required to continue domestic turf cutting from existing turf banks.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m

Cork to Tralee

County Kerry (NPWS, 2022)  
(The Stationery Office, 2021)

from a river, stream, floodplain, wetland, lake, turlough or pond.]

- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m

from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.

- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

<p>Slievefelim to Silvermines Mountains SPA (004165)</p>	<ul style="list-style-type: none"> <li>• Hen harrier</li> </ul>	<ul style="list-style-type: none"> <li>• Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]</li> <li>• Agricultural improvement of heath or bog.</li> <li>• Off-road recreational use of mechanically propelled vehicles.</li> </ul>	<ul style="list-style-type: none"> <li>• Limerick to County Limerick</li> </ul>	<p>(NPWS, 2022) (Office of the Attorney General, 2011)</p>
<p>Sligo/Leitrim Uplands SPA (004187)</p>	<ul style="list-style-type: none"> <li>• Peregrine</li> <li>• Chough</li> </ul>	<ul style="list-style-type: none"> <li>• Any activity that involves the deliberate killing or capture of any species of naturally occurring bird in the wild state, save where a specific derogation within the meaning of Article 9 of the Directive is in place.</li> <li>• The destruction, damage or removal of nests or eggs or any disturbance particularly during</li> </ul>	<ul style="list-style-type: none"> <li>• Letterkenny to County Sligo</li> </ul>	<p>(NPWS, 2022) (Office of the Attorney General, 2010)</p>

periods of breeding or rearing, save where a specific derogation within the meaning of Article 9 of the Directive is in place.

- The rearing or keeping of birds, the hunting and capture of which is prohibited, save where a specific derogation within the meaning of Article 7 of the Directive is in place.
- The application of fertilizer, slurry or farm-yard manure (FYM) must be in compliance with the Nitrates Directive.
- Land reclamation or habitat destruction, except for routine maintenance.
- Removal or alteration of earth/stone banks, including associated fences.
- Any other activity of which notice may be given by the Minister from time to time.

South Dublin Bay and River •  
Tolka Estuary SPA (004024)

- Light-bellied brent goose
- Oystercatcher
- Ringed plover
- Grey plover
- Knot
- Sanderling
- Dunlin
- Bar-tailed godwit
- Redshank
- Black-headed gull
- Roseate tern
- Common tern
- Arctic tern

- Any activity that involves the deliberate killing or capture of any species of naturally occurring bird in the wild state, save where a specific derogation within the meaning of Article 9 of the Directive is in place.
- The destruction, damage or removal of nests or eggs or any disturbance, particularly during periods of breeding or rearing, save where a specific derogation within the meaning of Article 9 of the Directive is in place.

- Bray to Dublin County Dublin
- Grand Canal
- Greenway
- Swords to Dublin
- Dublin to Leixlip
- Dublin port to Heuston Station via Connolly station

(NPWS, 2022)  
(Office of the Attorney General, 2010)



- Wetland waterbirds
- and
- The rearing or keeping of birds, the hunting and capture of which is prohibited, save where a specific derogation within the meaning of Article 7 of the Directive is in place.
  - Altering watercourses or wetlands, including changing the height of the water table, blocking or altering the flow of the water or deepening any channel.
  - Developing, operating or allowing leisure or sporting activities liable to cause significant disturbance to those species specified in Schedule 3 of these Regulations or damage to their habitats.
  - Any activity intended to disturb those species specified in Schedule 3 of these Regulations including by mechanical, air or wind powered or audible means.
  - Use of off-road recreational vehicles, other than by a landowner or on a public road or a non-public road serving forests or woodlands.
  - Harvesting marine species, unless for personal use not exceeding certain limits as may be set by the Minister from time to time.
  - Construction or alteration of tracks, paths, roads, embankments, car parks or access routes, or using or permitting the use of land for car parking.

- Planting of trees.
- Reclamation or infilling.
- Removal of soil, mud, sand, gravel, rock or minerals.
- Dredging whether for fishing or other purposes.
- Introduction (or re-introduction) into the wild of plants or animals not currently found in the area.
- Any activity which destroys habitat, except normal maintenance activities as defined in approved farm plans.
- Any other activity of which notice may be given by the Minister from time to time.

<p>South Dublin Bay SAC (000210) •</p> <ul style="list-style-type: none"> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Annual vegetation of drift lines</li> <li>• Salicornia and other annuals colonising mud and sand</li> <li>• Embryonic shifting dunes</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Undertaking scientific research involving the collection and removal of biological material.</li> </ul>	<ul style="list-style-type: none"> <li>• Bray to Dublin Grand Canal Greenway</li> <li>• Dublin port to Heuston Station via Connolly station</li> </ul>	<p>County Dublin (NPWS, 2022) (Office of the Attorney General, 2019)</p>
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- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Spahill And Clomantagh Hill SAC •  
(000849)

- Semi-natural dry grasslands and scrubland facies on calcareous substrates

- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock,

• Limerick  
Kilkenny

to County  
Kilkenny

(NPWS,  
2022)  
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- (\* important orchid sites)
- minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
  - Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or

Office,  
2021)

floodplain; or greater than 50m from a wetland, lake, turlough or pond.] Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Split Hills and Long Hill Esker SAC (001831) •

• Semi-natural dry grasslands and scrubland facies on calcareous substrates (\* important orchid sites)

- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it

• Mullingar Tullamore

to County Westmeath

(NPWS, 2022)  
(Office of the Attorney General, 2019)

is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is



not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock

density unless notice has been given that a lower percentage is applicable to a particular site.]

- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

St. Gobnet's Wood SAC •  
(000106)

- Old sessile oak woods with Ilex and Blechnum in the British Isles

- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of

• Cork to Tralee

County Cork

(NPWS, 2022)  
(Office of the Attorney General, 2016)

- crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m

- from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m

from a wetland, lake, turlough or pond.]

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (004161) •

• Hen harrier

- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Agricultural improvement of heath or bog.

• Tralee to Limerick County Kerry (NPWS, 2022) (Office of the Attorney General, 2012)

- Off-road recreational use of mechanically propelled vehicles.

<p>Streedagh Point Dunes SAC (001680)</p>	<p>Mudflats and sandflats not covered by seawater at low tide                  Perennial vegetation of stony banks                  Atlantic salt meadows                  Mediterranean salt meadows                  Shifting dunes along the shoreline with Ammophila arenaria (white dunes)                  Fixed coastal dunes with herbaceous vegetation (grey dunes)                  Narrow-mouthed Whorl Snail</p>	<p>Reclamation, including infilling. Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.                  Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]                  Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]                  Undertaking scientific research involving the collection and removal of biological material.                  Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.                  Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]                  Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m</p>	<p>Letterkenny to Sligo County Sligo</p>	<p>(NPWS, 2022)                  (Office of the Attorney General, 2018)</p>
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from a river, stream, floodplain, wetland, lake, turlough or pond.]

Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m

from a wetland, lake, turlough or pond.]

Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.

Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.



Water abstraction, sinking of boreholes and wells.

Planting of trees or multi-annual bioenergy crops.

Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Using or permitting the use of land for car parking where it may damage the vegetation, soil or substrate.

Harvesting marine invertebrate species in intertidal areas.

Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Termon Lough SAC (001321)	•	• Turloughs	No supplementary conservation advice available	• Galway to Ennis	County Galway	(NPWS, 2022)
The Gearagh SAC (000108)	•	<ul style="list-style-type: none"> <li>• Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation</li> <li>• Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation</li> <li>• Old sessile oak woods with Ilex and Blechnum in the British Isles</li> <li>• Alluvial forests with Alnus glutinosa and Fraxinus excelsior</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Stocking or re-stocking with fish.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for</li> </ul>	• Cork to Tralee	County Cork	(NPWS, 2022) (Office of the Attorney General, 2019)

- (Alno-Padion, Alnion incanae, Salicion albae)
- Lutra lutra (Otter)
    - the planting of crops on established reseeded grassland or cultivated land.]
    - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
    - Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
    - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
    - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
    - Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than

- 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or

floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

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The Gearagh SPA (004109)	•	<ul style="list-style-type: none"> <li>• Wigeon</li> <li>• Teal</li> <li>• Mallard</li> <li>• Coot</li> </ul>	No supplementary conservation advice available	• Cork to Tralee	County Cork	(NPWS, 2022)
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	<ul style="list-style-type: none"> <li>Wetland and waterbirds</li> </ul>	
<p>The Long Derries, Edenderry SAC (000925)</p>	<p>Semi-natural dry grasslands and scrubland facies on calcareous substrates (* important orchid sites)</p> <ul style="list-style-type: none"> <li>Reclamation, including infilling.</li> <li>Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]</li> <li>Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]</li> </ul>	<p>Edenderry to Naas County Offaly (NPWS, 2022) (Office of the Attorney General, 2016)</p>

- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening

- or blocking a drain, watercourse or waterbody.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

The Loughans SAC (000407)	•	• Turloughs	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]</li> </ul>	• Limerick Kilkenny	to County Kilkenny	(NPWS, 2022) (Office of the Attorney General, 2016)
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- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening

- or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

The Murrrough SPA (004186)	•	<ul style="list-style-type: none"> <li>• Red-throated diver</li> <li>• Greylag goose</li> <li>• Light-bellied brent goose</li> <li>• Wigeon</li> <li>• Teal</li> <li>• Black-headed gull</li> <li>• Herring gull</li> <li>• Little tern</li> <li>• Wetland waterbirds and</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m</li> </ul>	<ul style="list-style-type: none"> <li>• Enniscorthy to County Wicklow</li> <li>• Wicklow to Bray</li> </ul>	<p>(NPWS, 2022) (Office of the Attorney general, 2011)</p>
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from a wetland, lake, turlough or pond.]

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
- Developing or allowing the development or operation of recreational/ visitor facilities or activities, at a commercial scale.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

The Murrough Wetlands SAC • (002249)

- Annual vegetation of drift lines
- Perennial vegetation of stony banks
- Atlantic salt meadows
- Mediterranean salt meadows
- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is

• Enniscorthy to County Wicklow Wicklow  
• Wicklow to Bray

(NPWS, 2022)  
(Office of the Attorney General, 2017)

- Calcareous fens with *Cladium mariscus* and species of the Caricion *davallianae*
  - Alkaline fens
- not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not

required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas,

Tory Hill SAC (000439)	<p>Semi-natural dry grasslands and scrubland facies on calcareous substrates (* important orchid sites)</p> <p>Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i></p> <p>Alkaline fens</p>	<p>except over prescribed access routes.</p>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]</li> <li>• Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream,</li> </ul>	Cork to Limerick	County Limerick	<p>(NPWS, 2022)</p> <p>(Office of the Attorney General, 2016)</p>
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- floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or

- floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
  - Changing of agricultural use from hay meadow to any other use.
  - Works on, or alterations to, the banks, bed or flow of a

- drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

<p>• Tralee Bay and Magharees Peninsula, West to Cloghane SAC (002070)</p>	<ul style="list-style-type: none"> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Coastal lagoons</li> <li>• Large shallow inlets and bays</li> <li>• Reefs</li> <li>• Annual vegetation of drift lines</li> <li>• Perennial vegetation of stony banks</li> <li>• Vegetated sea cliffs of the Atlantic and Baltic coast</li> <li>• Salicornia and other annuals colonising mud and sand</li> <li>• Atlantic salt meadows</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Stocking or re-stocking with fish.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> </ul>	<ul style="list-style-type: none"> <li>• Cork to Tralee</li> <li>• Tralee to Limerick</li> </ul> <p>County Kerry (NPWS, 2022) (The Stationery Office, 2021)</p>
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- Mediterranean salt meadows
- Embryonic shifting dunes
- Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)
- Fixed coastal dunes with herbaceous vegetation (grey dunes)
- Dunes with *Salix repens* ssp. *argentea*
- Humid dune slacks
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*
- Otter
- Petalwort
- Undertaking scientific research involving the collection and removal of biological material.
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
- Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river,

stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.

- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- Using or permitting the use of land for car parking where it may damage the vegetation, soil or substrate.
- Harvesting marine invertebrate species in intertidal areas.
- Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

<p>Tralee Bay Complex SPA (004188)</p>	<ul style="list-style-type: none"> <li>• Whooper swan</li> <li>• Light-bellied brent goose</li> <li>• Shelduck</li> <li>• Wigeon</li> <li>• Teal</li> <li>• Mallard</li> <li>• Pintail</li> <li>• Scaup</li> <li>• Oystercatcher</li> <li>• Ringed plover</li> <li>• Golden plover</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> </ul>	<ul style="list-style-type: none"> <li>• Cork to Tralee</li> <li>• Tralee to Limerick</li> </ul>	<p>County Kerry</p>	<p>(NPWS, 2022) (Office of the Attorney General, 2019)</p>
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| <ul style="list-style-type: none"> <li>• Grey plover</li> <li>• Lapwing</li> <li>• Sanderling</li> <li>• Dunlin</li> <li>• Black-tailed godwit</li> <li>• Bar-tailed godwit</li> <li>• Curlew</li> <li>• Redshank</li> <li>• Turnstone</li> <li>• Black-headed gull</li> <li>• Common gull</li> <li>• Wetland waterbirds</li> </ul> | and | <ul style="list-style-type: none"> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeding. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]</li> <li>• Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.</li> <li>• Planting of trees or multi-annual bioenergy crops.</li> <li>• Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.</li> <li>• Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.</li> <li>• Harvesting marine invertebrate species in intertidal areas.</li> <li>• Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.</li> </ul> |
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Tramore Back Strand SPA •  
(04027)

- Light-bellied brent
- Golden plover
- Grey plover

- Reclamation, including infilling.
- Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.

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- Lapwing
  - Dunlin
  - Black-tailed godwit
  - Bar-tailed godwit
  - Curlew
  - Wetland waterbirds
- and
- Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
  - Construction or alteration of tracks, paths, roads, bridges, culverts or access routes
  - Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
  - Planting of trees or multi-annual bioenergy crops.
  - Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.
  - Developing or allowing the development or operation of recreational/visitor facilities or activities, at a commercial scale.
  - Harvesting marine invertebrate species in intertidal areas.
  - Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

General,  
2011)

Tramore Dunes and Backstrand  
SAC (000671)

Mudflats and sandflats not covered by seawater at low tide  
Annual vegetation of drift lines  
Perennial vegetation of stony banks  
Salicornia and other annuals colonising mud and sand  
Atlantic salt meadows  
Mediterranean salt meadows  
Embryonic shifting dunes  
Shifting dunes along the shoreline with Ammophila arenaria (white dunes)  
Fixed coastal dunes with herbaceous vegetation (grey dunes)

Reclamation, including infilling.  
Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.  
Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]  
Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]  
Undertaking scientific research involving the collection and removal of biological material.  
Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.  
Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]  
Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]

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to County  
Waterford

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(Office of the Attorney General, 2018)

- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Planting of trees or multi-annual bioenergy crops.

- › Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.
- › Using or permitting the use of land for car parking where it may damage the vegetation, soil or substrate.
- › Harvesting marine invertebrate species in intertidal areas.
- › Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.

Union Wood SAC (000638)	•	<ul style="list-style-type: none"> <li>• Old sessile oak woods with Ilex and Blechnum in the British Isles</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> <li>• Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Construction, removal or alteration of fences, stone</li> </ul>	<ul style="list-style-type: none"> <li>• Sligo to Enniskillen County Sligo</li> <li>• Sligo to Ballina</li> <li>• Longford to Sligo</li> </ul>	<p>(NPWS, 2022) (Office of the Attorney General, 2017)</p>
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walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]

- Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
- Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is

greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on

established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]

- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

Unshin River SAC (001898)

•

- Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation
- Semi-natural dry grasslands and scrubland facies on calcareous substrates (\* important orchid sites)
- Molinia meadows on calcareous, peaty or clayey-silt-laden soils

- Reclamation, including infilling.
- Stocking or re-stocking with fish.
- Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment.
- Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]
- Introduction, or re-introduction, of plants or

- Sligo to County Sligo Enniskillen
- Sligo to Ballina
- Longford to Sligo

(NPWS, 2022)  
(Office of the Attorney General, 2019)



- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*
  - Salmon
  - Otter
- animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]
- Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.
  - Construction, removal or alteration of fences, stone walls, hedgerows, banks or any field boundary other than temporary electric fencing. [Consent is not required for normal maintenance.]
  - Digging, ploughing, harrowing or otherwise disturbing soil or substrate. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 50m from a river, stream, floodplain, wetland, lake, turlough or pond.]
  - Applying inorganic or organic fertiliser, including slurry and farmyard manure. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
  - Applying lime. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or

floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Storage, burial, disposal or recovery of any materials. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Application of pesticides, including herbicides. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]
- Supplementary feeding of livestock. [Consent is not required for this activity on established reseeded grassland or cultivated land provided it is greater than 20m

from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]

- Significant changes in livestock density (including introduction of grazing), changes in livestock type or grazing season, other than on established reseeded grassland. [Consent is not required for changes of less than 20% in livestock density unless notice has been given that a lower percentage is applicable to a particular site.]
- Changing of agricultural use from hay meadow to any other use.
- Works on, or alterations to, the banks, bed or flow of a drain, watercourse or waterbody.
- Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.
- Water abstraction, sinking of boreholes and wells.
- Felling of trees or removing timber, including dead wood.
- Planting of trees or multi-annual bioenergy crops.
- Developing or consenting to the development or operation of commercial recreational/visitor facilities or organised recreational activities.

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Wexford Harbour and Sloba SPA • (004076)	<ul style="list-style-type: none"> <li>• Little grebe</li> <li>• Great crested grebe</li> </ul>	<ul style="list-style-type: none"> <li>• Reclamation, including infilling.</li> </ul>	<ul style="list-style-type: none"> <li>• Enniscorthy Wicklow to County Wexford (NPWS, 2022)</li> </ul>
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| <ul style="list-style-type: none"> <li>• Cormorant</li> <li>• Grey Heron</li> <li>• Bewick's swan</li> <li>• Whooper swan</li> <li>• Light-bellied brent goose</li> <li>• Shelduck</li> <li>• Wigeon</li> <li>• Teal</li> <li>• Mallard</li> <li>• Pintail</li> <li>• Scaup</li> <li>• Goldeneye</li> <li>• Red-breasted merganser</li> <li>• Hen harrier</li> <li>• Coot</li> <li>• Oystercatcher</li> <li>• Golden plover</li> <li>• Grey plover</li> <li>• Lapwing</li> <li>• Knot</li> <li>• Sanderling</li> <li>• Dunlin</li> <li>• Black-tailed godwit</li> <li>• Bar-tailed godwit</li> <li>• Curlew</li> <li>• Redshank</li> <li>• Black-headed gull</li> <li>• Lesser black-backed gull</li> <li>• Little tern</li> <li>• Greenland white-fronted goose</li> </ul> | <ul style="list-style-type: none"> <li>• Blasting, drilling, dredging or otherwise removing or disturbing rock, minerals, mud, sand, gravel or other sediment.</li> <li>• Cutting, uprooting or otherwise removing plants. [Consent is not required for harvesting of cultivated crops, or for grazing or mowing.]</li> <li>• Introduction, or re-introduction, of plants or animals not found in the area. [Consent is not required for the planting of crops on established reseeded grassland or cultivated land.]</li> <li>• Construction or alteration of tracks, paths, roads, bridges, culverts or access routes.</li> <li>• Burning, topping, clearing scrub or rough vegetation or reseeded. [Consent is not required for these activities on established reseeded grassland or cultivated land provided it is greater than 20m from a river, stream or floodplain; or greater than 50m from a wetland, lake, turlough or pond.]</li> <li>• Drainage works including digging, deepening, widening or blocking a drain, watercourse or waterbody.</li> <li>• Water abstraction, sinking of boreholes and wells.</li> <li>• Planting of trees or multi-annual bioenergy crops.</li> <li>• Any activity intended to disturb birds, including by mechanical, air, gas, wind powered or audible means.</li> </ul> | <ul style="list-style-type: none"> <li>• Enniscorthy to Wexford</li> <li>• Waterford to Wexford</li> <li>• Kilkenny to Enniscorthy</li> <li>• Wexford to Rosslare Europort</li> <li>• Enniscorthy to Waterford</li> </ul> | <p>(Office of the Attorney General, 2012)</p> |
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		<ul style="list-style-type: none"> <li>Wetland waterbirds</li> </ul>	and	<ul style="list-style-type: none"> <li>Developing or consenting to the development or operation of commercial recreational/visitor facilities or activities.</li> <li>Off-road recreational use of mechanically propelled vehicles.</li> <li>Harvesting marine invertebrate species in intertidal areas.</li> <li>Driving mechanically propelled vehicles in intertidal areas, except over prescribed access routes.</li> </ul>			
Wicklow Head SPA (004127)	•	<ul style="list-style-type: none"> <li>Kittiwake</li> </ul>	No supplementary conservation advice available	<ul style="list-style-type: none"> <li>Enniscorthy Wicklow to County Wicklow</li> <li>Wicklow to Bray</li> </ul>			(NPWS, 2022)
Wooddown Bog SAC (002205)	•	<ul style="list-style-type: none"> <li>Degraded raised bogs still capable of natural regeneration</li> </ul>	No supplementary conservation advice available	<ul style="list-style-type: none"> <li>Navan to Mullingar</li> <li>Mullingar Edenderry</li> <li>Mullingar to Maynooth</li> </ul>	County Westmeath		(NPWS, 2022)

**Table 7. Northern Ireland European sites relevant to the NCN Plan and proposed 4km wide corridors**

European site	Link to Conservation Objectives	Qualifying Interests	Vulnerabilities to Structure and Function of Site	NCN Corridor Name	County	Reference
Upper Lough Erne Ramsar Site (UK12024)	<a href="https://jncc.gov.uk/jncc-assets/RIS/UK12024.pdf">https://jncc.gov.uk/jncc-assets/RIS/UK12024.pdf</a>	<ul style="list-style-type: none"> <li>Ramsar criterion 1 The site is a particularly good representative example of a eutrophic lake and associated swamp, fen and wet grassland.</li> <li>Ramsar criterion 2 The site supports an appreciable assemblage of rare, vulnerable, or endangered species or subspecies of plant and animal.</li> <li>Ramsar criterion 3 The site is of special value for maintaining the genetic and ecological diversity of</li> </ul>	No further conservation advice	<ul style="list-style-type: none"> <li>Enniskillen to Cavan</li> <li>Armagh to Cavan</li> </ul>	Northern Ireland	(JNCC, 2008)

European site	Link to Conservation Objectives	Qualifying Interests	Vulnerabilities to Structure and Function of Site	NCN Corridor Name	County	Reference
		<p>Northern Ireland because of the quality and peculiarities of its flora and fauna.</p> <ul style="list-style-type: none"> <li>Ramsar criterion 6 The site regular supports internationally important numbers of wintering Whopper Swan (<i>Cygnus cygnus</i>).</li> </ul>				
Carlingford Lough Ramsar Site (UK12004)	<a href="https://rsis.ramsar.org/RISapp/files/RISrep/GB936RIS.pdf">https://rsis.ramsar.org/RISapp/files/RISrep/GB936RIS.pdf</a>	<ul style="list-style-type: none"> <li>Ramsar criterion 2 Supports an important assemblage of vulnerable and endangered Irish Red Data Book bird species. The site supports nationally important breeding populations of common tern <i>Sterna hirundo</i>. Roseate terns <i>Sterna dougallii</i> returned to the site after an absence of six years with 2 breeding pairs recorded in 1997. In the recent past the site has also supported nationally important numbers of Arctic tern <i>Sterna paradisaea</i>.</li> </ul>	No further conservation advice	<ul style="list-style-type: none"> <li>Newry to Dundalk</li> </ul>	Northern Ireland	(JNCC, 2005)
Magheraveeey Marl Loughs Ramsar Site (UK12017)	<a href="https://jncc.gov.uk/jncc-assets/RIS/UK12017.pdf">https://jncc.gov.uk/jncc-assets/RIS/UK12017.pdf</a>	<ul style="list-style-type: none"> <li>Magheraveeey Marl Loughs qualify under Criterion 1 because they represent a rare wetland type in Northern Ireland.</li> <li>Magheraveeey Marl Loughs qualify under Criterion 2 because they support vulnerable vegetation communities and species</li> </ul>	No further conservation advice	<ul style="list-style-type: none"> <li>Armagh to Cavan</li> <li>Enniskillen to Cavan</li> <li>Dundalk to Monaghan</li> </ul>	Northern Ireland	(JNCC, 2007)
Upper Lough Erne SAC (UK0016614)	<a href="https://www.daera-ni.gov.uk/sites/default/files/publications/dae/land-information-upper-lough-erne-conservation-objectives-2015.pdf">https://www.daera-ni.gov.uk/sites/default/files/publications/dae/land-information-upper-lough-erne-conservation-objectives-2015.pdf</a>	<ul style="list-style-type: none"> <li>Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>)</li> <li><i>Lutra lutra</i></li> <li>Natural eutrophic lakes with <i>Magnopotamion</i> or <i>Hydrocharition</i> - type vegetation</li> <li>Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles</li> </ul>	No additional information	<ul style="list-style-type: none"> <li>Enniskillen to Cavan</li> </ul>	Northern Ireland	(DAERA, 2022)

European site	Link to Conservation Objectives	Qualifying Interests	Vulnerabilities to Structure and Function of Site	NCN Corridor Name	County	Reference
Magheraveely Marl Loughs SAC (UK0016621)	<a href="https://www.daera-ni.gov.uk/sites/default/files/publications/dae/land-information-magheraveely-marl-loughs-conservation-objectives-2015.pdf">https://www.daera-ni.gov.uk/sites/default/files/publications/dae/land-information-magheraveely-marl-loughs-conservation-objectives-2015.pdf</a>	<ul style="list-style-type: none"> <li>• Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i></li> <li>• <i>Austropotamobius pallipes</i></li> <li>• Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.</li> <li>• Alkaline fens</li> </ul>	No additional information	<ul style="list-style-type: none"> <li>• Armagh to Cavan</li> <li>• Enniskillen to Cavan</li> <li>• Dundalk to Monaghan</li> </ul>	Northern Ireland	(DAERA, 2022)
River Foyle and Tributaries SAC (UK0030320)	<a href="https://www.daera-ni.gov.uk/sites/default/files/publications/dae/Conservation%20Objectives%20%282017%29.%20%20River%20Foyle%20%26%20Tributaries%20SAC.%20%20Version....pdf">https://www.daera-ni.gov.uk/sites/default/files/publications/dae/Conservation%20Objectives%20%282017%29.%20%20River%20Foyle%20%26%20Tributaries%20SAC.%20%20Version....pdf</a>	<ul style="list-style-type: none"> <li>• <i>Lutra lutra</i></li> <li>• <i>Salmo salar</i></li> <li>• Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and</li> <li>• <i>Callitricho-Batrachion</i> vegetation</li> </ul>	No additional information	<ul style="list-style-type: none"> <li>• Derry to Strabane</li> <li>• Letterkenny to Strabane</li> </ul>	Northern Ireland	(DAERA, 2022)
Upper Lough Erne SPA (UK9020071)	<a href="https://www.daera-ni.gov.uk/sites/default/files/publications/dae/upper-lough-erne-spa-conservation-objectives-2015.pdf">https://www.daera-ni.gov.uk/sites/default/files/publications/dae/upper-lough-erne-spa-conservation-objectives-2015.pdf</a>	<ul style="list-style-type: none"> <li>• The site qualifies under Article 4.1 of EC Directive 79/409 on the Conservation of Wild Birds by regularly supporting internationally important numbers of wintering Whooper Swan <i>Cygnus cygnus</i></li> <li>• Upper Lough Erne contributes to the maintenance of the geographic range of the Annex 1 Greenland White-fronted Goose <i>Anser albifrons flavirostris</i> population of Northern Ireland through supporting regionally important numbers.</li> <li>• Upper Lough Erne also supports an important assemblage of breeding birds which includes Common Tern <i>Sterna hirundo</i> and has in the past supported breeding Corncrake <i>Crex crex</i></li> <li>• Nationally important wintering wildfowl species, many of which are migratory, include Great Crested Grebe <i>Podiceps cristatus</i>, Cormorant <i>Phalacrocorax carbo</i>, Mute Swan <i>Cygnus olor</i>, Tufted</li> </ul>	No additional information	<ul style="list-style-type: none"> <li>• Armagh to Cavan</li> <li>• Enniskillen to Cavan</li> </ul>	Northern Ireland	(DAERA, 2022)

European site	Link to Conservation Objectives	Qualifying Interests	Vulnerabilities to Structure and Function of Site	NCN Corridor Name	County	Reference
		<p>Duck <i>Aythya fuligula</i>, Wigeon <i>Anas penelope</i>, Teal <i>Anas crecca</i>, Goldeneye <i>Bucephala clangula</i>, Coot <i>Fulica atra</i>, Mallard <i>Anas platyrhynchos</i>, Snipe <i>Gallinago gallinago</i>, Curlew <i>Numenius arquata</i> and Redshank <i>Tringa totanus</i>.</p>				
<p>Carlingford Lough SPA (UK9020161)</p>	<p><a href="https://www.daera-ni.gov.uk/sites/default/files/publications/dae/carlingford-lough-SPA-conservation-objectives-2015.pdf">https://www.daera-ni.gov.uk/sites/default/files/publications/dae/carlingford-lough-SPA-conservation-objectives-2015.pdf</a></p>	<ul style="list-style-type: none"> <li>The site qualifies under Article 4.1 of EC Directive 79/409 on the Conservation of Wild Birds by supporting internationally important breeding populations of Sandwich Tern <i>Sterna sandvicensis</i></li> <li>The site also qualifies under Article 4.2 of the Directive for supporting nationally important breeding populations of Common Tern <i>Sterna hirundo</i></li> <li>The site forms part of an extended cross-border site which supports internationally important numbers of overwintering Light-bellied Brent Geese <i>Branta bennicla hrota</i>.</li> <li>The extended site also supports nationally important numbers of the following wader species: Oystercatcher <i>Haematopus ostralegus</i>, Ringed Plover <i>Charadrius hiaticula</i>, Grey Plover <i>Pluvialis squatarola</i>, Dunlin <i>Calidris alpina</i> and Redshank <i>Tringa totanus</i></li> </ul>	<p>No additional information</p>	<ul style="list-style-type: none"> <li>Newry to Dundalk</li> </ul>	<p>Northern Ireland</p>	<p>(DAERA, 2022)</p>



# Appendix B National Cycle Network (NCN) Plan - Objectives for NCN Plan development

***Vision Statement:*** *Develop a safe, connected, and inviting cycle network between urban areas and key destinations to achieve accessible, sustainable, and high-quality routes that will help to reduce the carbon impact of transport and promote a healthy and inclusive society.*

The plan will focus on the inter-urban network with a priority on connectivity between urban areas of 5,000+ population, as well as to strategic destinations outside of urban areas (including transport hubs, centres of education, centres of employment, leisure destinations, and tourist destinations). It will aim to maximise the number of users and encourage modal shift. Where possible, the network will also optimise the potential for daily activities via active travel (e.g., school and work commutes) and integrate with existing and proposed cycling infrastructure. Both road safety and the safety and security of users will be considered when planning network routes.

The plan takes cognisance of the previous work in TII’s National Cycle Network Scoping Study (2010) which proposed a high-level route corridor connecting urban centres of 10,000+ population. It also aligns with the ongoing work of the NTA in developing urban and county level cycle networks. As such, the National Cycle Network Plan aims to compliment the various active travel infrastructure projects currently under development, and in planning, by providing a core spine that other networks and routes can connect to and expand upon.

National policies	Policy objective	NCN plan objective
<b>Combat climate change &amp; improve air quality</b> (NPF, CAP, NIFTI, & RSES).	Reduce emissions from transportation by supporting a modal shift from private vehicles to cycling and walking.	<ol style="list-style-type: none"> <li>1. Increase the number of cycle trips by improving the provision of safe and attractive cycling infrastructure.</li> <li>2. Enhance local environments and biodiversity where possible (e.g., pollinator plans, green corridors).</li> </ol>
<b>Healthy living</b> (NPF & SRTS).	Encourage active travel for daily activities and recreation.	<ol style="list-style-type: none"> <li>1. Connect to strategic destinations outside of urban areas as appropriate (including centres of education, centres of employment, and leisure destinations).</li> <li>2. Support the development of cycling and walking culture in Ireland.</li> </ol>

National policies	Policy objective	NCN plan objective
<p><b>Regional accessibility and economic development</b> (NPF &amp; RSES).</p>	<p>Support connectivity and economic growth of regional urban areas of 5,000+ population as well as priority tourist destinations.</p>	<ol style="list-style-type: none"> <li>1. Connect identified urban areas of 5,000+ population and those urban areas listed in the NTA's urban cycle network strategy.</li> <li>2. Connect to strategic destinations outside of urban areas as appropriate (including transport hubs and tourist destinations), as appropriate.</li> <li>3. Integrate with existing and proposed cycling infrastructure (including greenways, safe routes to schools, the EuroVelo network, Interreg projects), as appropriate.</li> <li>4. Integrate with existing and proposed cycling infrastructure in Northern Ireland, as appropriate.</li> </ol>
<p><b>Safety &amp; accessibility</b> (RSS &amp; NPF &amp; SRTS).</p>	<p>Propose safe and accessible infrastructure that encourages modal shift and limits interactions with other vehicles.</p>	<ol style="list-style-type: none"> <li>1. Encourage use of off-road infrastructure, where appropriate.</li> <li>2. Where efficient and effective, encourage routes that use 'quiet', low traffic volume roads.</li> <li>3. Promote the design of cycling infrastructure that is fully accessible to all users, regardless of age or ability.</li> <li>4. Promote the design of cycling infrastructure that meets safety requirements.</li> <li>5. Promote the design of cycling infrastructure that provides a safe and secure environment for all users.</li> </ol>
<p><b>Prudent use of public funds</b> (PSC).</p>	<p>Ensure appropriate balance between value for money and quality of outcome, in terms of potential impact on mode shift.</p>	<ol style="list-style-type: none"> <li>1. Propose corridors to maximise the number of users.</li> <li>2. Incorporate existing greenways, disused railways, canals, bypassed national roads, regional and local roads, long distance trails, as appropriate.</li> <li>3. Maximise the use of publicly owned land, where possible.</li> <li>4. Provide a framework to support the targeted investment in associated active travel projects.</li> <li>5. Take lessons from best practice internationally in development of national cycle networks, particularly the UK and EU high-cycling countries.</li> <li>6. Future-proof cycle route capacity, taking account of population growth and additional demand from modal shift.</li> </ol>

# Appendix C Detailed Appropriate Assessment of each NCN Corridor

Corridor Number and Name		European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
1	Buncrana to Letterkenny/Derry	Lough Swilly SAC, Lough Swilly SPA7	A large part of the 4km corridor within which the final cycle route will be located lies within 2km of Lough Swilly SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction to affect functionally-linked land for SPA birds outside the SPA	As a first preference the final route should be located at least 200m from the Lough Swilly SAC/SPA unless it can be demonstrated at individual scheme level that no adverse effects on the integrity of the SAC/SPA would arise from routing it closer. If it is routed closer than 200m care will need to be taken to ensure that there is no new lighting introduced. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction is needed to create the cycle route a noise assessment (and potentially noise mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds. The cycle network should not enter the SAC/SPA unless it can be demonstrated at the project level that no direct landtake of SAC habitats would occur and no recreational disturbance of SPA birds would arise. Since a large part of the 4km corridor either overlaps with, or lies within 2km of, Lough Swilly SPA, there will need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>boundary. While the western half of the 4km corridor as it passes the SAC and SPA overlaps entirely with the designated site, the eastern 2km does not do so. There is therefore ample opportunity for routing the final corridor well away from the SAC/SPA. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods).</p>	
2	Derry to Letterkenny	Lough Swilly SAC, Lough Swilly SPA	<p>A large part of the 4km corridor within which the final cycle route will</p> <p>As a first preference the final route should be located at least 200m from the Lough Swilly SAC/SPA unless it can be demonstrated at individual scheme level that no adverse effects on the integrity of the SAC/SPA would arise from routing it closer. If it is routed closer than 200m care will need to be taken to ensure that there is no new lighting introduced in areas that are currently unlit unless it can be demonstrated that</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>be located lies within 2km of Lough Swilly SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction to affect functionally-linked land for SPA birds outside the SPA boundary. For much of the route, the southern/eastern half of the 4km corridor covers open countryside and provides ample opportunity to</p>	<p>there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. The cycle network should not enter the SAC/SPA unless it can be demonstrated at the project level that no direct land take of SAC habitats would occur and no recreational disturbance of SPA birds would arise. Since a large part of the 4km corridor either overlaps with, or lies within 2km of, Lough Swilly SPA, there will need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. Between Carownamaddy and Castlecooly most of the corridor is occupied by SPA or SAC. North of Colehill the entire corridor overlaps with the SPA for a distance of c. 600m. In this stretch therefore it will be necessary for the cycle route to follow the existing roads/lanes to avoid any loss of SPA habitat, or to demonstrate that no significant loss of habitat for SPA birds would actually arise from delivering the cycle route.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>route away from the SPA/SAC. However, between Carownamaddy and Castlecooly most of the corridor is occupied by SPA or SAC. North of Colehill the entire corridor overlaps with the SPA for a distance of c. 600m. In this stretch therefore it will be necessary for the cycle route to follow the existing roads/lanes to avoid any loss of SPA habitat, or to demonstrate that no</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>significant loss of habitat for SPA birds would actually arise from delivering the cycle route. Therefore, while noise and visual disturbance and air quality impacts (if construction was required) could arise if the final route ran within 200m of the SAC or SPA, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g.</p>	



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods).	
3	Derry to Strabane River Finn SAC, River Foyle and Tributaries SAC	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within	The final route alignment should avoid any new construction within 200m of River Finn SAC or River Foyle and Tributaries SAC where possible unless it can be shown by detailed studies that no negative effects on otter would arise, such as due to the absence of holts in the relevant location. If the River Finn is to be traversed it should be using existing road alignments and bridges as a first preference and care will need to be taken to ensure that there is no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m of European sites is needed to create the cycle route an air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no air pollution impacts on sensitive habitats.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods).</p>	
4	Letterkenny to Strabane	Lough Swilly SAC, River Finn SAC, River Foyle and Tributaries SAC, Lough Swilly SPA	For the most part the 4km corridor allows a final route to be located well away from  The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>European sites if needed. Therefore, while noise and visual disturbance impacts, and air quality impacts, (if construction was required) could arise if the final route ran within 200m of a European site, for the majority of the corridor these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure</p>	<p>assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. The northern-most part of the 4km corridor at the northern end of the route lies within 2km of Lough Swilly SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. The approach to delivering the crossing of the River Finn should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made using the existing road bridge between Lifford and Strabane;</li> <li>2. Where engineering works to the road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary ‘in river’ works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or salmon population;</li> <li>3. If a new bridge crossing the River Finn SAC is required, the following general requirements must be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would</li> </ol> </li> </ol>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). The northern-most part of the 4km corridor within which the final cycle route will be located lies within 2km of Lough Swilly SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction to affect</p>	<p>require a soffit height: deck width ratio of 0.7 or above.                      d. A noise impact assessment of bridge construction regarding salmon and otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of either species.                      e. Water quality protection measures will be required.                      f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</p> <p>If detailed design work indicates that a new crossing of the River Finn is required but it is not possible to deliver such a crossing over the SAC without an adverse effect on site integrity, the alternative solution of crossing downstream of the SAC must be taken forward, or the Corridor otherwise revised (such as to cease at Lifford) to demonstrate no adverse effect on site integrity.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>functionally-linked land for SPA birds outside the SPA boundary. There is a single location, between Lifford and Strabane, where the entire 4km corridor crosses the River Finn SAC for c. 100m.</p> <p>The River Finn SAC is designated for oligotrophic waters, wet heaths with Erica tetralix, blanket bogs, transition mires and quaking bogs and its populations of salmon and otter.</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>Unless it stops at Lifford, there is no way the connection to Strabane can be accomplished without crossing the River Finn SAC due to the length of the SAC, other than by making a c. 15km detour north to cross the river downstream of the SAC at Whitehouse.</p>	
5	<p>Letterkenny to Sligo</p> <p>Durnesh Lough SAC, Lough Eske and Ardnamona Wood SAC, Lough Melvin SAC, Dunmuckrum Turloughs SAC, Lough Gill SAC, Lough Swilly SAC, River Finn SAC, Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, Ben Bulbin, Gleniff And Glenade Complex SAC, Croaghonagh Bog SAC, Ballintra SAC, Streedagh Point</p>	<p>For the most part the 4km corridor allows for the route to be moved well away from European sites if necessary. Therefore, while noise and</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where possible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of Sligo/Leitrim Uplands SPA, Donegal Bay SPA, Drumcliff Bay SPA, Lough</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
	<p>Dunes SAC, Bunduff Lough and Machair /Trawalua/Mullaghmore SAC, Donegal Bay (Murvagh) SAC, Sligo/Leitrim Uplands SPA, Donegal Bay SPA, Drumcliff Bay SPA, Lough Swilly SPA, Cummeen Strand SPA</p>	<p>visual disturbance impacts, and air quality impacts, (if construction was required) could arise if the final route ran within 200m of the SACs and SPAs, these impacts are avoidable for the majority of the corridor through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most</p>	<p>Swilly SPA and Cummeen Strand SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. The approach to delivering the crossing of Lough Melvin will be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made using one of the three existing road bridges north from Sligo and one of the existing bridges crossing Lough Melvin;</li> <li>2. Where engineering works to a road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or white-clawed crayfish, salmon or lamprey populations;</li> <li>3. If a new bridge is required, the following general requirements must be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC/SPA boundaries and/or must involve no loss of qualifying SAC habitat or supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding SPA birds, salmon,</li> </ol> </li> </ol>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>constrained sections, or using standard mitigation methods). Parts of the 4km corridor within which the final cycle route will be located lie within 2km of Sligo/Leitrim Uplands SPA, Donegal Bay SPA, Drumcliff Bay SPA, Lough Swilly SPA and Cummeen Strand SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route</p>	<p>lamprey and otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of either species.</p> <p>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</p> <p>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</p> <p>If detailed design work indicates that a new crossing of either Cummeen Strand SPA/Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, Lough Gill SAC, or Lough Melvin SAC would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to cease north of Sligo or make the 12km eastwards detour to avoid Lough Melvin to demonstrate no adverse effect on site integrity.</p>



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>construction to affect functionally-linked land for SPA birds outside the SPA boundary. At Sligo, the entire 4km corridor traverses either the Cummeen Strand SPA and Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, or Lough Gill SAC. Cummeen Strand SAC is designated for its estuaries, mudflats and sandflats not covered by seawater at low tide, embryonic shifting dunes, shifting dunes along the shoreline with</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>Ammophila arenaria (white dunes), fixed coastal dunes with herbaceous vegetation (grey dunes), Juniperus communis formations on heaths or calcareous grasslands and calcareous grassland. Lough Gill SAC is designated for its natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation, calcareous grassland, oak woodland, alluvial forest,</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>and populations of white-clawed crayfish, sea lamprey, brook lamprey, river lamprey, salmon and otter. The SPA is designated for its light-bellied brent goose, oystercatcher, redshank and wetland and waterbirds.</p> <p>The entire corridor also crosses Lough Melvin SAC at Magheracar. Lough Melvin is designated for its oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>uniflorae and/or Isoeto-Nanojuncetea, Molinia meadows on calcareous, peaty or clayey-silt-laden soils and populations of salmon and otter.</p> <p>There is no way the connection to Sligo can be accomplished without crossing either Cummeen Strand SPA/Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, or Lough Gill SAC, as these form an east west barrier north of Sligo. It would be possible to</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		avoid traversing Lough Melvin but only with a substantial 12km detour to the east and back.	
6	Sligo to Enniskillen Lough Gill SAC,Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC,Ballysadare Bay SAC,Boleybrack Mountain SAC,Unshin River SAC,Union Wood SAC,Corratirrim SAC,Ballysadare Bay SPA,Cummeen Strand SPA	For the most part the 4km corridor allows for the final route to be moved well away from European sites if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts, (if construction was required) could arise if the final route ran within 200m of these SACs or SPAs, these impacts	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of Ballysadare Bay SPA and Cummeen Strand SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. The approach to delivering the crossing of the Unshin River should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made using existing road bridges;</li> <li>2. Where engineering works to a road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for</li> </ol>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>are avoidable for most of the corridor through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Parts of the 4km corridor within which the final cycle route will be located lie within 2km of Ballysadare Bay</p>	<p>otter passage along the riverbanks. If any temporary ‘in river’ works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or salmon population;</p> <p>3. If a new bridge crossing the Unshin River SAC is required, the following general requirements must be followed in designing and assessing the structure:</p> <ul style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding salmon and otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of either species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ul> <p>If detailed design work indicates that a new crossing of the Unshin River is required but it is not possible to deliver such a crossing over the SAC without an adverse effect on site integrity, the Corridor should be revised (such as to not to connect to Sligo) to demonstrate no adverse effect on site integrity.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>SPA and Cummeen Strand SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction to affect functionally-linked land for SPA birds outside the SPA boundary. At Ballisodare and again at Collooney the entire 4km corridor traverses the Unshin River SAC. The SAC is designated for</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>its water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation, its semi-natural dry grasslands and scrubland facies on calcareous substrates, its Molinia meadows on calcareous, peaty or clayey-silt-laden soils, its alluvial forests with Alnus glutinosa and Fraxinus excelsior and its populations of salmon and otter.</p> <p>In all three</p>	



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		cases it would not be possible to make the connection to Sligo from the south without crossing the Unshin River SAC due to the length of the river.	
7	Enniskillen to Cavan Lough Oughter And Associated Loughs SAC, Kilroosky Lough Cluster SAC, Lough Oughter SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within	It is possible to deliver most of the final cycle route without any direct effects on European sites. The final route alignment should avoid any new construction within 200m of any European sites where possible. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of Lough Oughter SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Parts of the 4km corridor lie within 2km of Lough Oughter SPA. Since this site is</p>	<p>determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
8	<p>Longford to Sligo</p> <p>Lough Gill SAC,Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC,Clooneen Bog SAC,Ballysadare Bay SAC,Lough Arrow SAC,Unshin River SAC,Bricklieve Mountains and Keishcorran SAC,Union Wood SAC,Lough Forbes Complex SAC,Ballykenny-Fisherstown Bog SPA,Ballysadare Bay SPA,Lough Arrow SPA,Cummeen Strand SPA</p>	<p>For the most part, the 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of several SPAs. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation</p>	<p>is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. The approach to delivering the crossing of the Unshin River should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made using existing road bridges;</li> <li>2. Where engineering works to a road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary ‘in river’ works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or salmon population;</li> <li>3. If a new bridge crossing the Unshin River SAC is required, the following general requirements must be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding salmon and otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of either species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> </ol> </li> </ol>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>methods). Parts of the 4km corridor within which the final cycle route will be located lie within 2km of Ballykenny-Fisherstown Bog SPA, Ballysadare Bay SPA, Lough Arrow SPA and Cummeen Strand SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-</p>	<p>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</p> <p>If detailed design work indicates that a new crossing of the Unshin River is required but it is not possible to deliver such a crossing over the SAC without an adverse effect on site integrity, the Corridor should be revised (such as to not to connect to Sligo) to demonstrate no adverse effect on site integrity.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>linked land for SPA birds outside the SPA boundary. At Ballisodare and again at Collooney the entire 4km corridor traverses the Unshin River SAC. The SAC is designated for its water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation, its semi-natural dry grasslands and scrubland facies on calcareous substrates (* important orchid sites), its</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>Molinia meadows on calcareous, peaty or clayey-silt-laden soils, its alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> and its populations of salmon and otter.</p> <p>It would not be possible to make the connection to Sligo from the south without crossing the Unshin River SAC due to the length of the river.</p>	
9	Sligo to Ballina	Ox Mountains Bogs SAC, Lough Nabrickkeagh Bog SAC, Lough Gill SAC, River Moy SAC, Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, Ballysadare Bay SAC, Unshin	Parts of the 4km corridor within which the final cycle route will be
The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new			

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	<p>River SAC, Union Wood SAC, Killala Bay/Moy Estuary SAC, Turloughmore (Sligo) SAC, Lough Hoe Bog SAC, Ballysadare Bay SPA, Cummeen Strand SPA</p>	<p>located lie within 2km of Ballysadare Bay SPA and Cummeen Strand SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary. At Ballisodare and again at Collooney the entire 4km corridor</p>	<p>construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of several SPAs. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. The approach to delivering the crossing of the Unshin River should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made using existing road bridges;</li> <li>2. Where engineering works to a road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or salmon population;</li> <li>3. If a new bridge crossing the Unshin River SAC is required, the following general requirements must be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would</li> </ol> </li> </ol>



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>traverses the Unshin River SAC. The SAC is designated for its water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation, its semi-natural dry grasslands and scrubland facies on calcareous substrates, its Molinia meadows on calcareous, peaty or clayey-silt-laden soils, its alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> and its populations of</p>	<p>require a soffit height: deck width ratio of 0.7 or above.</p> <p>d. A noise impact assessment of bridge construction regarding salmon and otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of either species.</p> <p>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</p> <p>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</p> <p>If detailed design work indicates that a new crossing of the Unshin River is required but it is not possible to deliver such a crossing over the SAC without an adverse effect on site integrity, the Corridor should be revised (such as to not to connect to Sligo) to demonstrate no adverse effect on site integrity.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>salmon and otter.</p> <p>It would not be possible to make the connection to Sligo from the south without crossing the Unshin River SAC due to the length of the river.</p>	
10	Ballina to Castlebar River Moy SAC, Killala Bay/Moy Estuary SAC, Lough Conn and Lough Cullin SPA	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required)</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of several SPAs. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Parts of the 4km corridor lie within 2km of</p>	<p>works are consented. The approach to delivering the crossing of the River Moy should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made using one of existing road bridges across the River Moy;</li> <li>2. Where engineering works to a road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary ‘in river’ works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or white-clawed crayfish, salmon or lamprey populations;</li> <li>3. If a new bridge is required, the following general requirements must be followed in designing and assessing the structure:                         <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC/SPA boundaries and/or must involve no loss of qualifying SAC habitat or supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding SPA birds, salmon, lamprey and otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of either species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be</li> </ol> </li> </ol>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>Lough Conn and Lough Cullin SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary. West of Foxford the entire 4km corridor traverses the River Moy SAC/ Lough Conn and Lough Cullin SPA. The SAC is designated for</p>	<p>demonstrated that there would be no adverse effect on site integrity.</p> <p>If detailed design work indicates that a new crossing of the River Moy SAC or Lough Conn and Lough Cullin SPA would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to make the 20km eastwards detour to avoid the River Moy to demonstrate no adverse effect on site integrity.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>its lowland hay meadows, active raised bogs, degraded raised bogs still capable of natural regeneration, depressions on peat substrates of the Rhynchosporion , alkaline fens, old sessile oak woods with Ilex and Blechnum in the British Isles, alluvial forests with Alnus glutinosa and Fraxinus excelsior and its populations of white clawed crayfish, sea lamprey, brook lamprey, salmon and otter. It would be</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		possible to divert around the SPA but due to the length and large area covered by the River Moy it would not be possible to deliver this corridor without a crossing of the River Moy SAC without a c. 20km detour and back.	
1 1 Westport to Castlebar	Clew Bay Complex SAC	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air	No constraints or mitigation needed

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). The</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		western-most part of the corridor at Westport lies within 2km of Clew Bay Complex SAC. However, this constitutes an area of open water that is a very small part of the overall corridor and this SAC is not designated for mobile species that would use the land around the cycle route.	
1 2 Galway to Castlebar	Lough Corrib SAC, Galway Bay Complex SAC, River Moy SAC, Balla Turlough SAC, Inner Galway Bay SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of several SPAs. There will therefore need to be consideration of any



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or</p>	<p>potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. The approach to delivering the River Moy crossing should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made using one of existing road bridges across the River Moy;</li> <li>2. Where engineering works to a road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary ‘in river’ works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or white-clawed crayfish, salmon or lamprey populations;</li> <li>3. If a new bridge is required, the following general requirements must be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding salmon, lamprey and</li> </ol> </li> </ol>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>using standard mitigation methods). The southern-most part of 4km corridor within which the final cycle route will be located lies within 2km of Inner Galway Bay SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary. In</p>	<p>otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of either species.</p> <p>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</p> <p>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</p> <p>If detailed design work indicates that a new crossing of the River Moy SAC would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to make the 20km eastwards detour to avoid the River Moy to demonstrate no adverse effect on site integrity.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>the vicinity of Lakeland Lower the entire 4km corridor traverses the River Moy SAC. Due to the length and large area covered by the River Moy it would not be possible to deliver this corridor without a crossing of the River Moy SAC without a c. 20km detour and back.</p>	
<p>1 3</p>	<p>Castlebar to Longford River Moy SAC, Lough Ree SAC, Balla Turlough SAC, Cloonchambers Bog SAC, Brown Bog SAC, Corliskea/Trien/Cloonfelliv Bog SAC, Lough Forbes Complex SAC, Corbo Bog SAC, Ballykenny-Fisherstown Bog SPA</p>	<p>The southern-most part of 4km lies within 2km of Lough Ree SPA. Since this site is designated for mobile species that may make use of habitat</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of several SPAs. There will therefore need to be consideration of any</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary. In the vicinity of Lakeland Lower the entire 4km corridor for both routes traverses the River Moy SAC. Due to the length and large area covered by the River Moy it would not be possible to deliver this corridor without a crossing of the</p>	<p>potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. The approach to delivering the River Moy crossing will be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made using one of existing road bridges across the River Moy;</li> <li>2. Where engineering works to a road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or white-clawed crayfish, salmon or lamprey populations;</li> <li>3. If a new bridge is required, the following general requirements must be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding salmon, lamprey and</li> </ol> </li> </ol>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>River Moy SAC without a c. 20km detour and back.</p>	<p>otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of either species.</p> <p>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</p> <p>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</p> <p>If detailed design work indicates that a new crossing of the River Moy SAC would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to make the 20km eastwards detour to avoid the River Moy to demonstrate no adverse effect on site integrity.</p>
<p>1 4</p>	<p>Roscommon to Athlone</p> <p>Lough Ree SAC, River Shannon Callows SAC, Lough Ree SPA, Middle Shannon Callows SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if</p>	<p>Given the width of the 4km corridor it is possible to deliver most of the final cycle route without any direct effects on European sites. The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also need to be consideration at the project level of any detailed design requirements (such as prevention of access) that will ensure no net increase in recreational pressure within the European site. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). The southern-most part of 4km corridor lies within 2km of</p>	<p>relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>Lough Ree SPA and Middle Shannon Callows SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>1 5</p> <p>Athlone to Longford</p>	<p>Lough Ree SAC, River Shannon Callows SAC, Brown Bog SAC, Lough Forbes Complex SAC, Corbo Bog SAC, Lough Ree SPA, Ballykenny-Fisherstown Bog SPA, Middle Shannon Callows SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites where possible and within 200m of any European sites there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in</p>	<p>significant air pollution impacts on sensitive habitats. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>the most constrained sections, or using standard mitigation methods). Parts of the 4km corridor lies within 2km of Lough Ree SPA, Ballykenny-Fisherstown Bog SPA and Middle Shannon Callows SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		functionally-linked land for SPA birds outside the SPA boundary	
1 6 Longford to Mullingar	Lough Ennell SAC, Lough Ennell SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Lough Ennell SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary</p>	
<p>1 7 Athlone to Mullingar</p>	<p>Lough Ennell SAC, Carn Park Bog SAC, Crosswood Bog SAC, Lough Ree SAC, River Shannon Callows SAC, Lough Ree SPA, Lough Ennell SPA, Middle Shannon Callows SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also need to be consideration at the project level of any detailed design requirements (such as prevention of access) that will ensure no net increase in recreational pressure within the European site. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Lough Ree SPA, Lough Ennell SPA, Middle</p>	<p>provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		Shannon Callows SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary	
1 8	Athlone to Tulamore	Charleville Wood SAC, Lough Ree SAC, River Shannon Callows SAC, Moyclare Bog SAC, Mongan Bog SAC, Pilgrim's Road Esker SAC, Crosswood Bog SAC, Fin Lough (Offaly) SAC, River Suck Callows SPA, Lough Ree SPA, Mongan Bog SPA, Middle Shannon Callows SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained</p>	<p>new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of four SPAs. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of River Suck Callows SPA, Lough Ree SPA, Mongan Bog SPA and Middle Shannon Callows SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-</p>	



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		linked land for SPA birds outside the SPA boundary.	
1 9 Limerick to Portlaoise	Slieve Bloom Mountains SAC, Lower River Shannon SAC, River Barrow And River Nore SAC, Slieve Bloom Mountains SPA, River Shannon and River Fergus Estuaries SPA, Lough Derg (Shannon) SPA	Part of the 4km corridor lies within 2km of Slieve Bloom Mountains SPA, River Shannon and River Fergus Estuaries SPA and Lough Derg (Shannon) SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of several SPAs. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. The approach to delivering the crossing of the Slieve Bloom Mountains and River Nore should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the corridor will follow the existing road through the SAC/SPA;</li> <li>2. Where engineering works to the road would be required to render it suitable, there must be no loss of SAC habitat and an assessment would be required to ensure there was no loss of functionally-linked habitat that might affect the ability of the SPA to support its hen harrier population. Construction must be timed to avoid the sensitive season for hen harrier.</li> <li>3. Where engineering works to a road bridge across the River Barrow &amp; River Nore SAC</li> </ol>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>SPA birds outside the SPA boundary. Between Ballyduff and Carrowreagh the entire 4km corridor lies within Slieve Bloom Mountains SPA for at least 5km and it also passes through the SAC at Lacka. At Lacka the 4km corridor also crosses the River Barrow And River Nore SAC.</p> <p>The Slieve Bloom Mountains SAC is designated for its wet heaths with Erica tetralix,</p>	<p>would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. They must be situated so that no loss of SAC plant species would arise. If any temporary ‘in river’ works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or Desmoulin’s Whorl Snail, Freshwater Pearl Mussel, White-clawed Crayfish, Sea Lamprey, Brook Lamprey, River Lamprey, Twaite Shad, Salmon, Otter, Killarney Fern and Nore Pearl Mussel populations;</p> <p>4. If a new bridge is required, the following general requirements must be followed in designing and assessing the structure:</p> <ul style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC/SPA boundaries and/or must involve no loss of qualifying SAC habitat or supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding hen harrier, otter and qualifying fish species will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of any species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ul> <p>If detailed design work indicates that any improvements to the existing road through</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		blanket bogs and alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> . The SPA is designated for its hen harrier population. The River Barrow and Nore SAC is designated for its estuaries, mudflats and sandflats not covered by seawater at low tide, reefs, <i>Salicornia</i> and other annuals colonising mud and sand, Atlantic salt meadows, Mediterranean salt meadows, Water courses of plain to montane levels	the Slieve Bloom Mountains SAC/SPA or a new crossing of the River Nore would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to end before Portlaoise to demonstrate no adverse effect on site integrity.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		with the Ranunculion fluitantis and Callitriche-Batrachion vegetation, European dry heaths, Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, Petrifying springs with tufa formation, Old sessile oak woods with Ilex and Blechnum in the British Isles, Alluvial forests with Alnus glutinosa and Fraxinus excelsior, Desmoulin's Whorl Snail, Freshwater Pearl Mussel,	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>White-clawed Crayfish, Sea Lamprey, Brook Lamprey, River Lamprey, Twaite Shad, Salmon, Otter, Killarney Fern and Nore Pearl Mussel.</p> <p>There is no way to make the connection to Portlaoise without traversing the River Barrow &amp; River Nore SAC and/or the River Nore SPA.</p>	
20	Limerick to Athlone	<p>Lower River Shannon SAC, Lough Derg, North-east Shore SAC, Lough Ree SAC, River Shannon Callows SAC, Kilcarren-Firville Bog SAC, Mongan Bog SAC, Pilgrim's Road Esker SAC, Crosswood Bog SAC, Fin Lough (Offaly) SAC, Redwood Bog SAC, River Shannon and River</p>	<p>Part of the 4km corridor lies within 2km of River Shannon and River Fergus Estuaries SPA, River Suck Callows SPA, Lough Ree SPA,</p> <p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
	<p>Fergus Estuaries SPA, River Suck Callows SPA, Lough Ree SPA, Lough Derg (Shannon) SPA, River Little Brosna Callows SPA, Mongan Bog SPA, Middle Shannon Callows SPA</p>	<p>Lough Derg (Shannon) SPA, River Little Brosna Callows SPA, Mongan Bog SPA and Middle Shannon Callows SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary. At Templedeew the entire 4km</p>	<p>within 2km of several SPAs. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. The approach to delivering the crossing of the River Shannon should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made one of the existing road bridges across the River Shannon;</li> <li>2. Where engineering works to a road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks;</li> <li>3. If a new bridge is required, the following general requirements must be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC/SPA boundaries and/or must involve no loss of qualifying SAC habitat or supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding SPA birds and otter will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of either species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to</li> </ol> </li> </ol>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>corridor crosses the River Shannon Callows SAC and Middle Shannon Callows SPA. The SAC is designated for Molinia meadows on calcareous, peaty or clayey-silt-laden soils, lowland hay meadows, alkaline fens, limestone pavements, alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> and its population of otter. The SPA is designated for whooper swan, wigeon, corncrake,</p>	<p>confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).                      f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</p> <p>If detailed design work indicates that a new crossing of the River Shannon would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to end south of the River Shannon to demonstrate no adverse effect on site integrity.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>golden plover, lapwing, back-tailed godwit, black-headed gull and its wetland and waterbird assemblage.</p> <p>There is no way to make the connection to Athlone without crossing the River Shannon and thus traversing the SAC and/or SPA or crossing the River Suck Callows SPA.</p>	
2 1	Galway to Athlone Lough Corrib SAC, Galway Bay Complex SAC, Glenloughaun Esker SAC, Lough Ree SAC, River Shannon Callows SAC, Rahasane Turlough SAC, Lough Rea SAC, River Suck Callows	At Ballinasloe the entire 4km corridor traverses the River Suck Callows SPA. The SPA is designated for	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no air pollution impacts on sensitive habitats. The approach to delivering the



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>its population of whooper swan, wigeon, golden plover, lapwing, Greenland white fronted goose and its wetland and waterbird assemblage.</p> <p>There is no way to make the connection to Athlone without crossing the River Suck Callows SPA or crossing the River Shannon (and its European sites).</p>	<p>River Suck crossing should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the crossing will be made one of the existing road bridges across the River Suck;</li> <li>2. Where engineering works to a road bridge would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity,;</li> <li>3. If a new bridge is required, the following general requirements must be followed in designing and assessing the structure:                         <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SPA boundaries and/or must involve no loss of supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure that no damage to banks occurs;</li> <li>c. A noise impact assessment of bridge construction regarding SPA birds will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population.</li> <li>d. Water quality protection measures will be required.</li> <li>e. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ol> </li> </ol> <p>If detailed design work indicates that a new crossing of the River Suck would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to end south of the River Suck to demonstrate no adverse effect on site integrity.</p>
2 2	Galway to Ennis	Lough Corrib SAC, Moyree River System SAC, Ballyallia Lake SAC, East Burren Complex SAC, Galway Bay Complex SAC, Coole-Garryland Complex SAC, Lough Fingall Complex	The 4km corridor is sufficiently wide that direct impacts on any European sites

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
	<p>SAC,Lower River Shannon                      SAC,Ballyogan Lough                      SAC,Caherglassaun Turlough                      SAC,Old Farm Buildings, Ballymacrogan SAC,Dromore Woods And Loughs SAC,Termon Lough SAC,Coole-Garryland SPA,Inner Galway Bay SPA,Cregganna Marsh SPA,Ballyallia Lough SPA</p>	<p>can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new</p>	<p>project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Coole-Garryland SPA, Inner Galway Bay SPA, Cregganna Marsh SPA and Ballyallia Lough SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>2 3</p> <p>Ennis to Limerick</p>	<p>Ballyallia Lake SAC, Lower River Shannon SAC, Newhall and Edenvale Complex SAC, Lough Gash Turlough SAC, River Shannon and River Fergus Estuaries SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of River Shannon and River Fergus Estuaries SPA. Since this site is designated for mobile species that may make	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>2 4</p> <p>Shannon to Ennis/Limerick</p>	<p>Lower River Shannon SAC, River Shannon and River Fergus Estuaries SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required)</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of</p>	<p>habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>River Shannon and River Fergus Estuaries SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>2 5</p> <p>Tralee to Limerick</p>	<p>Tralee Bay And Magharees Peninsula, West To Cloghane SAC,Askeaton Fen Complex SAC,Lower River Shannon SAC,Moanveanlagh Bog SAC,River Shannon and River Fergus Estuaries SPA,Tralee Bay Complex SPA,Stack's to</p>	<p>Part of the 4km corridor lies within 2km of River Shannon and River Fergus Estuaries SPA, Tralee Bay Complex SPA,</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or</p>



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
	Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA	Stack's to Mullaghareirk Mountains and West Limerick Hills and Mount Eagle SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary. At Ballynageragh, Ballyhorgan East and Shanbally the entire 4km corridor	<p>significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of several SPAs. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the corridor will follow existing roads through the SPA and across the SAC river;</li> <li>2. Where engineering works to the road would be required to render it suitable, an assessment would be required to ensure there was no loss of functionally-linked habitat that might affect the ability of the SPA to support its hen harrier population. Construction must be timed to avoid the sensitive season for hen harrier.</li> <li>3. Where engineering works to a road bridge across the Lower River Shannon SAC would be required to render it suitable, and must not hinder potential for otter passage along the riverbanks. They must be situated so that no loss of SAC plant species would arise. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or qualifying fish and dolphin populations;</li> <li>4. If a new bridge is required, the following general requirements must be followed in designing and assessing the structure: <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC/SPA boundaries and/or must involve no loss of qualifying SAC habitat or supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on</li> </ol> </li> </ol>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>traverses the Lower River Shannon SAC. The SAC is designated for sandbanks which are slightly covered by sea water all the time, estuaries, mudflats and sandflats not covered by seawater at low tide, coastal lagoons, large shallow inlets and bays, reefs, perennial vegetation of stony banks, vegetated sea cliffs of the Atlantic and Baltic coasts, Salicornia and other annuals colonising mud and sand,</p>	<p>the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</p> <p>d. A noise impact assessment of bridge construction regarding hen harrier, otter and qualifying fish and dolphin species will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of any species.</p> <p>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</p> <p>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</p> <p>If detailed design work indicates that any improvements to existing roads through the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA, or a new crossing of the River Shannon, would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to end before Limerick to demonstrate no adverse effect on site integrity.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		Atlantic salt meadows, Mediterranean salt meadows, water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation, Molinia meadows on calcareous, peaty or clayey-silt-laden soils, alluvial forests with Alnus glutinosa and Fraxinus excelsior and its populations of freshwater pearl mussel, sea lamprey, brook lamprey, river lamprey, salmon, otter	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>and bottlenose dolphin. Between Doonakenna and Glendarragh much of the 4km corridor lies across Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. The SPA is designated for its population of hen harrier.</p> <p>It would be possible to make the connection to Limerick without traversing the SPA by moving the corridor south of the</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		SPA but it is not possible to make the connection to Limerick without traversing either the Lower River Shannon SAC or the Blackwater River SAC.	
2 6	Newcastle West to Tralee/ Limerick	N/A	No constraints or mitigation needed
2 7	Cork to Tralee St. Gobnet's Wood SAC, Killarney National Park, Macgillycuddy's Reeks And Caragh River Catchment SAC, Tralee Bay And Magharees Peninsula, West To Cloghane SAC, Ballyseedy Wood SAC, Sheheree (Ardagh) Bog SAC, The Gearagh SAC, Slieve Mish Mountains SAC, Castlemaine Harbour SAC, Tralee Bay Complex SPA, Mullaghanish to Musheramore Mountains	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
	SPA,Killarney National Park SPA,The Gearagh SPA	(if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km	potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>corridor lies within 2km of Tralee Bay Complex SPA, Mullaghanish to Musheramore Mountains SPA ,Killarney National Park SPA and the Gearagh SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
2 8 Cork to Bandon	Cork Harbour SPA	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Cork Harbour SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>2 9</p> <p>Cork to Kinsale</p>	<p>Cork Harbour SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Cork Harbour SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.	
30	Cork to Cork airport	Cork Harbour SPA	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route</p> <p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods).Part of the 4km corridor lies within 2km of Cork Harbour SPA. Since this</p>	<p>of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>3 1 Cork airport to Carrigaline</p>	<p>Cork Harbour SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation</p>	<p>birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>methods). Part of the 4km corridor lies within 2km of Cork Harbour SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>3 2</p> <p>Port of Cork to Carrigaline</p>	<p>Cork Harbour SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the</p>



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new</p>	<p>project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Cork Harbour SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
<p>3 3</p> <p>Cork to Port of Cork</p>	<p>St. Gobnet's Wood SAC, Cork Harbour SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Cork Harbour SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		affect functionally-linked land for SPA birds outside the SPA boundary.	
3 4 Cobh to Midleton	Great Island Channel SAC, Cork Harbour SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Cork Harbour SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>3 5</p>	<p>Great Island Channel SAC, Cork Harbour SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Cork Harbour SPA. Since this</p>	<p>of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>3 6 Cork to Waterford</p>	<p>Blackwater River (Cork/Waterford) SAC, Great Island Channel SAC, Lower River Suir SAC, Glendine Wood SAC, Ballymacoda (Clonpriest and Pillmore) SAC, Mid-Waterford Coast SPA, Cork Harbour SPA, Blackwater Estuary SPA, Dungarvan Harbour SPA, Ballymacoda Bay SPA</p>	<p>Part of the 4km corridor lies within 2km of Mid-Waterford Coast SPA, Cork Harbour SPA, Blackwater Estuary SPA, Dungarvan Harbour SPA and Ballymacoda</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of several SPAs. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>Bay SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary. Between Muckridge and Tinnabinna the entire 4km corridor traverses the Blackwater Estuary SPA and Blackwater River (Cork/Waterfor</p>	<p>habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the corridor will follow existing roads through the SPA and across the SAC;</li> <li>2. Where engineering works to the bridge and roads through the SAC/SPAs would be required to render it suitable, an assessment would be required to ensure there was no loss of SAC habitat or of functionally-linked habitat that might affect the ability of the SPA to support its bird population. Construction must be timed to avoid the winter period.</li> <li>3. Where engineering works to a road bridge across the Blackwater River SAC would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. They must be situated so that no loss of SAC plant species would arise. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or qualifying fish populations;</li> <li>4. If a new bridge is required, the following general requirements must be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC/SPA boundaries and/or must involve no loss of qualifying SAC habitat or supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> </ol> </li> </ol>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>d) SAC and at Killongford it traverses Dungarvan Harbour SPA.</p> <p>Blackwater River SAC is designated for its estuaries, mudflats and sandflats not covered by seawater at low tide, perennial vegetation of stony banks, Salicornia and other annuals colonising mud and sand, Atlantic salt meadows, Mediterranean salt meadows, water courses of plain to montane levels with the Ranunculion</p>	<p>d. A noise impact assessment of bridge construction regarding hen harrier, otter and qualifying fish species will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of any species.</p> <p>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</p> <p>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</p> <p>If detailed design work indicates that any improvements to existing roads through the SPA, or a new crossing of the Blackwater River, would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to divert to cross where the River Blackwater is narrower and/or to divert around the Dungarvan Harbour SPA between Killongford and Dungarvan to demonstrate no adverse effect on site integrity.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>fluitantis and Callitricho-Batrachion vegetation, old sessile oak woods with Ilex and Blechnum in the British Isles, alluvial forests with Alnus glutinosa and Fraxinus excelsior, freshwater pearl mussel, white-clawed crayfish, sea lamprey, brook lamprey, river lamprey, twaite shad, salmon, otter and Killarney fern.</p> <p>Dungarvan Harbour SPA is designated for its great crested grebe, light-bellied brent</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>goose, shelduck, red-breasted merganser, oystercatcher, golden plover, grey plover, lapwing, knot, dunlin, black-tailed godwit, bar-tailed godwit, curlew, redshank, turnstone and its population of wetland and waterbirds.</p> <p>It would not be possible to make the connection to Waterford without traversing the River Blackwater SAC.</p>	
3 7	Cork to Fermoy Blackwater River (Cork/Waterford) SAC,Cork	Part of the 4km corridor lies within 2km of	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
	Harbour SPA, Blackwater Callows SPA	Cork Harbour SPA and Blackwater Callows SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary. At Ballinterry the entire 4km route corridor traverses the Blackwater River (Cork/Waterford) SAC.	<p>should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of several SPAs. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the corridor will follow existing road bridges across the SAC;</li> <li>2. Where engineering works to any bridge across the SAC would be required to render it suitable, an assessment would be required to ensure there was no loss of SAC habitat.</li> <li>3. Where engineering works to a road bridge across the Blackwater River SAC would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. They must be situated so that no loss of SAC plant species would arise. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or qualifying fish populations;</li> <li>4. If a new bridge is required, the following general requirements must be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;</li> </ol> </li> </ol>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>It would be possible to route around the SAC with a c. 12km diversion to the west.</p>	<p>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</p> <p>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</p> <p>d. A noise impact assessment of bridge construction regarding hen harrier, otter and qualifying fish species will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of any species.</p> <p>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</p> <p>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</p> <p>If detailed design work indicates that a new crossing of the Blackwater River, would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to divert to west around the SAC to demonstrate no adverse effect on site integrity.</p>
<p>3 8</p> <p>Cork to Limerick</p>	<p>Blackwater River (Cork/Waterford) SAC, Lower River Shannon SAC, Tory Hill SAC, River Shannon and River Fergus Estuaries SPA</p>	<p>Part of the 4km corridor lies within 2km of River Shannon and River Fergus Estuaries SPA. Since this site is designated for mobile species that may make</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of several SPAs. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route</p>

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		<p>use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary. The entire 4km corridor traverses the Blackwater River (Cork/Waterford) SAC at Mallow.</p> <p>It would be possible to route around the SAC with a c. 12km diversion to the west.</p>	<p>is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the corridor will follow existing road bridges across the SAC;</li> <li>2. Where engineering works to any bridge across the SAC would be required to render it suitable, an assessment would be required to ensure there was no loss of SAC habitat.</li> <li>3. Where engineering works to a road bridge across the Blackwater River SAC would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. They must be situated so that no loss of SAC plant species would arise. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or qualifying fish populations;</li> <li>4. If a new bridge is required, the following general requirements must be followed in designing and assessing the structure:             <ol style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding otter and qualifying fish species will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no</li> </ol> </li> </ol>



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
			<p>significant effect on the population of any species.</p> <p>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</p> <p>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</p> <p>If detailed design work indicates that a new crossing of the Blackwater River, would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to divert to west around the SAC to demonstrate no adverse effect on site integrity.</p>
3 9 Limerick to Waterford	Lower River Suir SAC, Lower River Shannon SAC	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of River Shannon SAC and Lower River Suir SAC.</p>	<p>provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>However, any impact on movement of mobile riverine species could be avoided through use of existing road and crossing infrastructure.</p>	
<p>4 0 Limerick to Kilkenny</p>	<p>Spahill And Clomantagh Hill SAC, Lower River Suir SAC, Lower River Shannon SAC, River Barrow And River Nore SAC, The Loughans SAC, Clare Glen SAC, River Nore SPA, Slievefelim to Silvermines Mountains SPA</p>	<p>Part of the 4km corridor lies within 2km of River Nore SPA and Slievefelim to Silvermines Mountains SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of several SPAs. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. The approach to delivering this corridor should be as follows:</p> <p>1. Where feasible the corridor will follow existing roads through the SPA and across the SAC river;</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>affect functionally-linked land for SPA birds outside the SPA boundary. Between Newport and Kilcommon the entire 4km corridor encompasses the Slievefelim to Silvermines Mountains SPA and Lower River Shannon SAC. The SPA is designated for its hen harrier population. The reasons for SAC designation have already been given.</p> <p>At Birchhill the entire 4km corridor traverses the</p>	<p>2. Where engineering works to the road would be required to render it suitable, an assessment would be required to ensure there was no loss of functionally-linked habitat that might affect the ability of the SPA to support its hen harrier population. Construction must be timed to avoid the sensitive season for hen harrier.</p> <p>3. Where engineering works to a road bridge across the Lower River Shannon SAC or Lower River Suir SAC would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. They must be situated so that no loss of SAC plant species would arise. If any temporary 'in river' works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or qualifying fish and dolphin populations;</p> <p>4. If a new bridge is required, the following general requirements must be followed in designing and assessing the structure:</p> <ul style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC/SPA boundaries and/or must involve no loss of qualifying SAC habitat or supporting habitat for SPA birds;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding hen harrier, otter and qualifying fish and dolphin species will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of any species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be</li> </ul>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>Lower River Suir SAC. The SAC is designated for Atlantic salt meadows, Mediterranean salt meadows, water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation, Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, old sessile oak woods with Ilex and Blechnum in the British Isles, alluvial forests with Alnus glutinosa and Fraxinus</p>	<p>demonstrated that there would be no adverse effect on site integrity.</p> <p>If detailed design work indicates that any improvements to existing roads through the Slievefelim to Silvermines Mountains SPA, or a new crossing of the River Shannon or Suir, would not be possible without an adverse effect on site integrity, the Corridor should be revised, such as to divert south of the SPA and north of the River Suir to demonstrate no adverse effect on site integrity.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>excelsior, Taxus baccata woods of the British Isles and its populations of freshwater pearl mussel, white clawed crayfish, sea lamprey, brook lamprey, river lamprey, twaite shad, salmon and otter.</p> <p>It would be possible to route the corridor south of the SPA and north of the Lower River Suir SAC. However, it would not be possible to make the connection with Kilkenny without traversing the</p>	

Corridor Number and Name		European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
			Lower River Shannon.	
4 1	Kilkenny to Portlaoise	River Barrow And River Nore SAC, Lisbigney Bog SAC, River Nore SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of River Nore SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route</p>	



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.	
4 2	Kilkenny to Carlow	River Barrow And River Nore SAC, River Nore SPA	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts</p> <p>The final route alignment should avoid any new construction within 200m of any European sites and within 200m of any European sites there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of River Nore SPA. Since these sites are designated for mobile species that may make</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>4 3</p> <p>Kilkenny to Enniscorthy</p>	<p>Blackstairs Mountains SAC, River Barrow And River Nore SAC, Slaney River Valley SAC, River Nore SPA, Wexford Harbour and Slob's SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required)</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of</p>	<p>habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>River Nore SPA and Wexford Harbour &amp; Slobs SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>4 4</p> <p>Kilkenny to Waterford</p>	<p>Lower River Suir SAC, River Barrow And River Nore SAC, River Nore SPA</p>	<p>Part of the 4km corridor lies within 2km of River Nore SPA. Since this site is designated for mobile species that may make</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also need to be consideration at the project level of any detailed design requirements (such as prevention of access) that will ensure no net increase in recreational pressure within the European site. If any new</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	<p>construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>
<p>4 5</p>	<p>Waterford to Tramore Lower River Suir SAC, Tramore Dunes and Backstrand SAC, Tramore Back Strand SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required)</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites and within 200m of any European sites there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of</p>	

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		<p>Tramore Back Strand SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>4 6 Enniscorthy to Waterford</p>	<p>Lower River Suir SAC, River Barrow And River Nore SAC, Slaney River Valley SAC, Wexford Harbour and Slobbs SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air</p>



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or</p>	<p>quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>using standard mitigation methods). Part of the 4km corridor lies within 2km of Wexford Harbour and Slobs SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>4 7</p>	<p>Waterford to Wexford Lower River Suir SAC, River Barrow And River Nore SAC, Slaney River Valley</p>	<p>The 4km corridor is sufficiently</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
	SAC, Wexford Harbour and Sloba SPA	<p>wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing</p>	<p>should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Wexford Harbour and Sloba SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		linked land for SPA birds outside the SPA boundary.	
4 8 Wexford to Rosslare Europort	Carnsore Point SAC, Slaney River Valley SAC, Wexford Harbour and Slob's SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Wexford Harbour and Slob's SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>4 9 Enniscorthy to Wicklow</p>	<p>Buckroney-Brittis Dunes And Fen SAC, The Murrough Wetlands SAC, Slaney River Valley SAC, Wexford Harbour and Slobbs SPA, Wicklow Head SPA, The Murrough SPA</p>	<p>Part of the 4km corridor lies within 2km of Wexford Harbour and Slobbs SPA, Wicklow Head SPA and the Murrough SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of several SPAs. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented. The approach to delivering this corridor should be as follows:</p> <ol style="list-style-type: none"> <li>1. Where feasible the corridor will follow existing road bridges across the SAC;</li> </ol>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary. At Enniscorthy, Clovass and Clonhenret the entire 4km corridor traverses the Slaney River Valley SAC. The SAC is designated for estuaries, mudflats and sandflats not covered by seawater at low tide, Atlantic salt meadows, Mediterranean salt meadows, water courses of plain to</p>	<p>2. Where engineering works to any bridge across the SAC would be required to render it suitable, an assessment would be required to ensure there was no loss of SAC habitat.</p> <p>3. Where engineering works to a road bridge across the Slaney River would be required to render it suitable, any permanent works must remain out of the water column, unless it can be demonstrated this would not affect site integrity, and must not hinder potential for otter passage along the riverbanks. If any temporary ‘in river’ works were to be necessary, studies (including but not limited to underwater noise and hydrodynamic studies), and potentially mitigation, would be required to ensure the works could be delivered without an adverse effect on the SAC habitats or qualifying fish or seal populations;</p> <p>4. If any new bridges are required, the following general requirements must be followed in designing and assessing the structure:</p> <ul style="list-style-type: none"> <li>a. Any abutments must be located outside the SAC boundary and/or must involve no loss of qualifying SAC habitat;</li> <li>b. Any abutments must be located outside the river channel and must be set sufficiently far back from the bank top to ensure passage of otter along the banks is not prevented;</li> <li>c. The soffit of the bridge should be sufficiently high that significant shading impacts on the water column and in river vegetation will not arise. Research suggests this would require a soffit height: deck width ratio of 0.7 or above.</li> <li>d. A noise impact assessment of bridge construction regarding otter and qualifying fish and seal species will be required, and potentially mitigation (such as seasonal restrictions on working, alternative construction methods or noise control techniques) to ensure no significant effect on the population of any species.</li> <li>e. Water quality protection measures will be required as well as a hydrological study to confirm any new construction would not affect special interest features that are hydrologically sensitive (e.g. alluvial woodland).</li> <li>f. Lighting should be avoided in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity.</li> </ul> <p>If detailed design work indicates that a new crossing of the Blackwater River, would not</p>



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation, old sessile oak woods with Ilex and Blechnum in the British Isles, alluvial forests with Alnus glutinosa and Fraxinus excelsior and its populations of freshwater pearl mussel, sea lamprey, brook lamprey, river lamprey, twaite shad, salmon, otter and harbour seal.</p> <p>It would be possible to avoid any</p>	<p>be possible without an adverse effect on site integrity, the Corridor should be revised, such as to divert east around the SAC to demonstrate no adverse effect on site integrity.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		crossings of the SAC by moving the corridor approximately 4km to the east.	
50	Wicklow to Bray The Murrough Wetlands SAC,Bray Head SAC,Wicklow Head SPA,The Murrough SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Since a large part of the 4km corridor either overlaps with, or lies within 2km of several SPAs, there will need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Wicklow Head SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
			<p>boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>
5 1	Bray to Dublin	<p>South Dublin Bay SAC, Rockabill to Dalkey Island SAC, Ballyman Glen SAC, Bray Head SAC, South Dublin Bay and River Tolka Estuary SPA, Dalkey Islands SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route</p> <p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of South Dublin Bay and River</p>	<p>of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>Tolka Estuary SPA and Dalkey Islands SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>5 2</p> <p>Carlow to Aklow</p>	<p>Slaney River Valley SAC, River Barrow And River Nore SAC,</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary.</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also need to be consideration at the project level of any detailed design requirements (such as prevention of access) that will ensure no net increase in recreational pressure within the European site. If any new</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most</p>	<p>construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Slaney River Valley SAC and River Barrow and River Nore SAC.</p>	
<p>5 3</p> <p>Carlow to Portlaoise</p>	<p>River Barrow And River Nore SAC</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable.. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats.</p>



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of River Barrow</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		and River Nore SAC.	
5 4	Tullamore to Portlaoise Charleville Wood SAC, River Barrow And River Nore SAC	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
			<p>the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of the River Barrow and River Nore SAC.</p>
5 5	Mullingar to Tullamore	Charleville Wood SAC, Split Hills And Long Hill Esker SAC, Lough Ennell SAC, Lough Ennell SPA	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore,</p> <p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained</p>	<p>new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Lough Ennell SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>5 6</p>	<p>Edenderry to Portlaoise</p>	<p>River Barrow And River Nore SAC</p>	<p>The 4km corridor is sufficiently</p> <p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing</p>	<p>should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of River Barrow and River Nore SAC.</p>	
5 7	Newbridge to Naas	N/A	N/A
5 8	Portlaoise to Newbridge	<p>River Barrow And River Nore SAC, Pollardstown Fen SAC</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance</p> <p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation</p>	<p>ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats.</p>



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
			methods). Part of the 4km corridor lies within 2km of River Barrow and River Nore SAC.
5 9	Naas to Blessington	Red Bog, Kildare SAC	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable</p> <p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also need to be consideration at the project level of any detailed design requirements (such as prevention of access) that will ensure no net increase in recreational pressure within the European site. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Although part of the 4km corridor lies within 2km of Red Bog SAC, impacts on the SAC will be avoidable through keeping the</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>final route alignment over 200m from the SAC to avoid air quality impacts and ensuring any new construction takes account of, and avoids, any hydrological impacts for the SAC.</p>	
60	Edenderry to Naas Ballynafagh Bog SAC, Ballynafagh Lake SAC, The Long Derries, Edenderry SAC	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required)</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Although part of the 4km corridor lies</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>within 2km of Ballynafagh Bog SAC, Ballynafagh Lake SAC, The Long Derries and Edenderry SAC, impacts on the SAC will be avoidable through keeping the final route alignment over 200m from the SACs to avoid air quality impacts and ensuring any new construction takes account of, and avoids, any hydrological impacts for the SACs.</p>	
6 1	Mullingar to Edenderry River Boyne And River Blackwater SAC, Wooddown Bog	The 4km corridor is sufficiently	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
	SAC, Mount Hevey Bog SAC, River Boyne and River Blackwater SPA	<p>wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing</p>	<p>should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of River Boyne and Blackwater SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		SPA birds outside the SPA boundary.	
6 2 Mullingar to Maynooth	River Boyne And River Blackwater SAC, Wooddown Bog SAC, Rye Water Valley/ Carton SAC, Mount Hevey Bog SAC, River Boyne and River Blackwater SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions	The final route alignment should avoid any new construction within 200m of any European sites and within 200m of any European sites there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of River Boyne and Blackwater SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.	
6 3 Navan to Mullingar	River Boyne And River Blackwater SAC, Wooddown Bog SAC, Mount Hevey Bog SAC, River Boyne and River Blackwater SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site,	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also need to be consideration at the project level of any detailed design requirements (such as prevention of access) that will ensure no net increase in recreational pressure within the European site. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of River Boyne and Blackwater SPA. Since this site is designated for mobile species</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.	
6 4 Dunboyne to Leixlip	Rye Water Valley/Carton SAC	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also need to be consideration at the project level of any detailed design requirements (such as prevention of access) that will ensure no net increase in recreational pressure within the European site. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Although part of the 4km</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>corridor lies within 2km of Rye Water Valley/Carton SAC, impacts on the SAC will be avoidable through keeping the final route alignment over 200m from the SACs to avoid air quality impacts and ensuring any new construction takes account of, and avoids, any hydrological impacts for the SACs.</p>	
<p>6 5</p>	<p>Maynooth to Leixlip</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new</p>	<p>project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>infrastructure in the most constrained sections, or using standard mitigation methods). Although part of the 4km corridor lies within 2km of Rye Water Valley/Carton SAC, impacts on the SAC will be avoidable through keeping the final route alignment over 200m from the SACs to avoid air quality impacts and ensuring any new construction takes account of, and avoids, any</p>	



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		hydrological impacts for the SACs.	
6 6 Leixlip to Cellbridge	Rye Water Valley/Carton SAC	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Although part of the 4km corridor lies within 2km of Rye Water Valley/Carton SAC, impacts on the SAC will be avoidable through keeping the final route alignment over 200m from the</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		SACs to avoid air quality impacts and ensuring any new construction takes account of, and avoids, any hydrological impacts for the SACs.	
6 7 Dublin to Leixlip	Rye Water Valley/Carton SAC, South Dublin Bay and River Tolka Estuary SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of South Dublin Bay &amp; River</p>	<p>of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>Tolka Estuary SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
6 8	Naas to Dublin	N/A	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and  No constraints or mitigation needed.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		using standard mitigation methods).	
6 9 Swords to Dublin Airport	Malahide Estuary SAC/SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also need to be consideration at the project level of any detailed design requirements (such as prevention of access) that will ensure no net increase in recreational pressure within the European site. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of a Malahide Estuary SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods).	
70	Celbridge to Dublin	N/A	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts</p> <p>There are no European sites within the corridor. However, South Dublin Bay SAC and SPA are 3km from the eastern end of the proposed corridor, which lies within urban Dublin. Published guidance regarding distances from SPA boundaries at which habitat for brent goose is likely to be significant in sustaining populations (Natural England, 2009) cites an impact risk zone of 2km from the designated site, which the corridor exceeds. Moreover, given the nature of a cycle way even new construction would be likely to result in insignificant levels of habitat loss from supporting habitat, if any. Nonetheless, based on local data for the Dublin area regarding brent geese (<a href="https://www.pleanala.ie/publicaccess/EIAR-NIS/305680/Environmental/Appropriate%20Assessment/Natura%20Impact%20Statement.pdf">https://www.pleanala.ie/publicaccess/EIAR-NIS/305680/Environmental/Appropriate%20Assessment/Natura%20Impact%20Statement.pdf</a>) it is clear that there are Brent goose sites within the 4km corridor. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats. In such a situation</p>



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>(if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods).</p>	<p>wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
7 1 Grand Canal Greenway	N/A	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of</p>	<p>There are no European sites within the corridor. However, South Dublin Bay SAC and SPA are 2.5km from the eastern end of the proposed corridor, which lies within urban Dublin. Published guidance regarding distances from SPA boundaries at which habitat for brent goose is likely to be significant in sustaining populations (Natural England, 2009) cites an impact risk zone of 2km from the designated site, which the corridor exceeds. Moreover, given the nature of a cycle way even new construction would be likely to result in insignificant levels of habitat loss from supporting habitat, if any. Nonetheless, based on local data for the Dublin area regarding brent geese (<a href="https://www.pleanala.ie/publicaccess/EIAR-NIS/305680/Environmental/Appropriate%20Assessment/Natura%20Impact%20Statement.pdf">https://www.pleanala.ie/publicaccess/EIAR-NIS/305680/Environmental/Appropriate%20Assessment/Natura%20Impact%20Statement.pdf</a>) it is clear that there are Brent goose sites within the 4km corridor. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods).	
7 2 Dublin port to Heuston Station via Connolly station	South Dublin Bay and River Tolka Estuary SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of South Dublin</p>	<p>is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>Bay &amp; River Tolka Estuary SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
7 3	Swords to Dublin	<p>Malahide Estuary SAC, South Dublin Bay and River Tolka Estuary SPA, Malahide Estuary SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore,</p> <p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also need to be consideration at the project level of any detailed design requirements (such as prevention of access) that will ensure no net increase in recreational pressure within the European site. If any new construction within 200m is needed to create the cycle route a noise and air quality</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained</p>	<p>assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of South Dublin Bay &amp; River Tolka Estuary SPA and Malahide Estuary SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		outside the SPA boundary.	
7 4 Navan to Swords	River Boyne And River Blackwater SAC, Malahide Estuary SAC, Malahide Estuary SPA, River Boyne and River Blackwater SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of River Boyne &amp; River Blackwater SPA and Malahide Estuary SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>7 5 Balbrigan to Swords</p>	<p>Rogerstown Estuary SAC, Rockabill to Dalkey Island SAC, Malahide Estuary SAC, Skerries Islands SPA, Malahide Estuary SPA, Rogerstown Estuary SPA, Rockabill SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Since a large part of the 4km corridor either overlaps with, or lies within 2km of several SPAs, there will need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Skerries Islands SPA, Malahide</p>	<p>wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>Estuary SPA, Rogerstown Estuary SPA and Rockabill SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
7 6	<p>Drogheda to Balbriggan River Boyne And River Blackwater SAC, Boyne Coast And Estuary SAC, River Nanny Estuary and Shore SPA, Boyne Estuary SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in</p>	<p>will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of River Nanny Estuary and Shore SPA and Boyne Estuary SPA Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		outside the SPA boundary.	
7 7	Navan to Drogheda River Boyne And River Blackwater SAC, Boyne Estuary SPA, River Boyne and River Blackwater SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Boyne Estuary SPA and River Boyne &amp; Blackwater SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there</p>	



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>7 8</p> <p>Dundalk to Drogheda</p>	<p>River Boyne And River Blackwater SAC, Dundalk Bay SAC, Boyne Coast And Estuary SAC, Clogher Head SAC, Boyne Estuary SPA, Dundalk Bay SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lies within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Boyne Estuary SPA and Dundalk Bay</p>	<p>provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
			<p>SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>
7 9	Cavan to Navan	River Boyne And River Blackwater SAC, Killyconny Bog (Cloghbally) SAC, River Boyne and River Blackwater SPA	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual</p> <p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard</p>	<p>ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>mitigation methods). Part of the 4km corridor lies within 2km of River Boyne &amp; Blackwater SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
80	Longford to Cavan	Lough Oughter And Associated Loughs SAC, Clooneen Bog SAC, Lough Forbes Complex SAC,	The 4km corridor is sufficiently wide that direct
		The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
	Lough Oughter SPA, Ballykenny-Fisherstown Bog SPA	impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure	demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Lough Oughter SPA and Ballykenny-Fisherstown Bog SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		functionally-linked land for SPA birds outside the SPA boundary.	
8 1 Armagh to Cavan	Lough Oughter And Associated Loughs SAC, Kilroosky Lough Cluster SAC, Lough Oughter SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.



Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Lough Oughter SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there</p>	

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>8 2 Dundalk to Monaghan</p>	<p>Dundalk Bay SAC, Kilroosky Lough Cluster SAC, Dundalk Bay SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Dundalk Bay SPA. Since this site is</p>	<p>provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>8 3</p> <p>Dundalk to Armagh</p>	<p>Dundalk Bay SAC, Dundalk Bay SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part</p>	<p>lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>of the 4km corridor lies within 2km of Dundalk Bay SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	
<p>8 4</p> <p>Dundalk to Carrickmacro ss</p>	<p>Dundalk Bay SAC, Dundalk Bay SPA</p>	<p>The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided</p>	<p>The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in</p>	<p>will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.</p>

Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Dundalk Bay SPA. Since this site is designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.</p>	

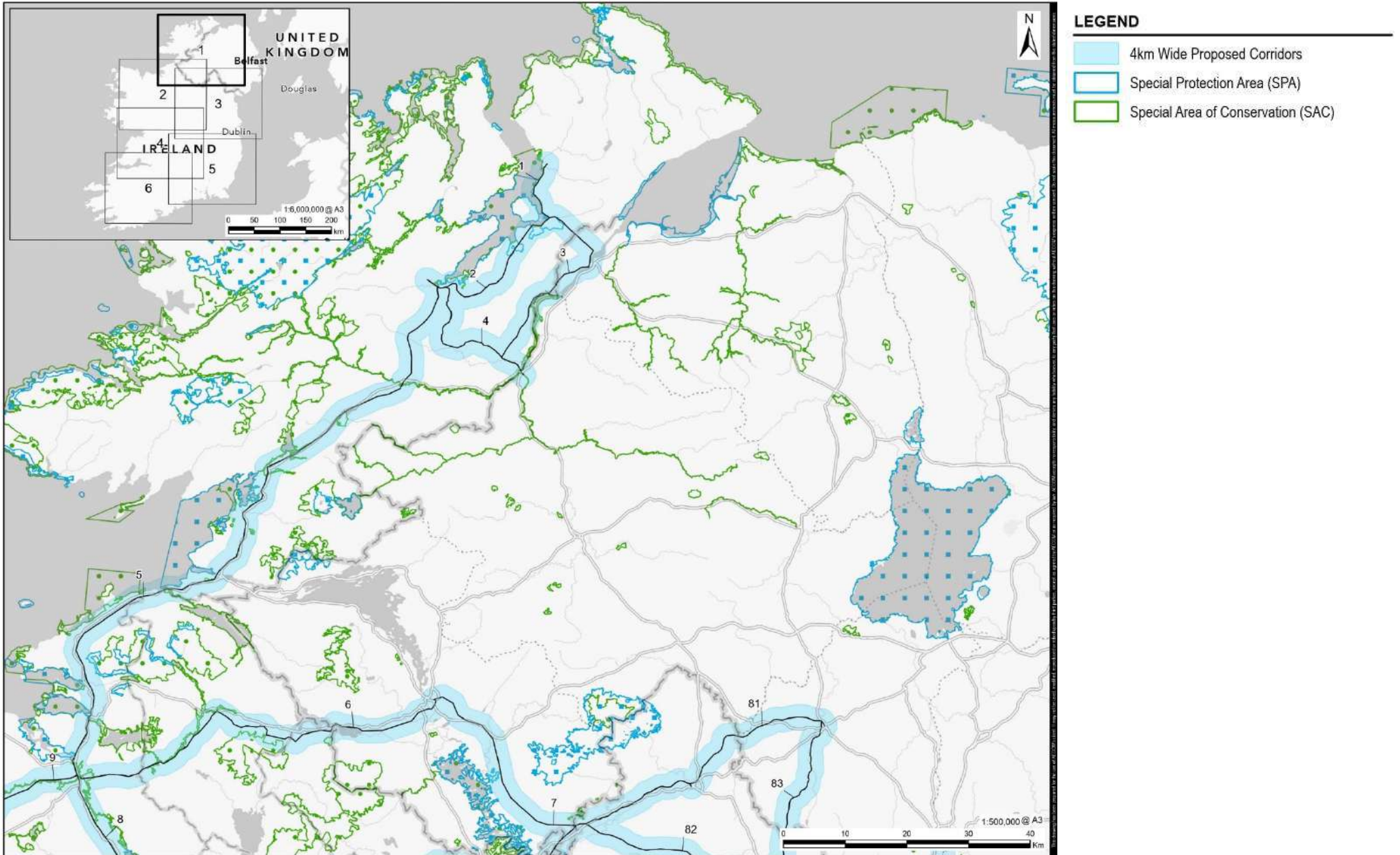


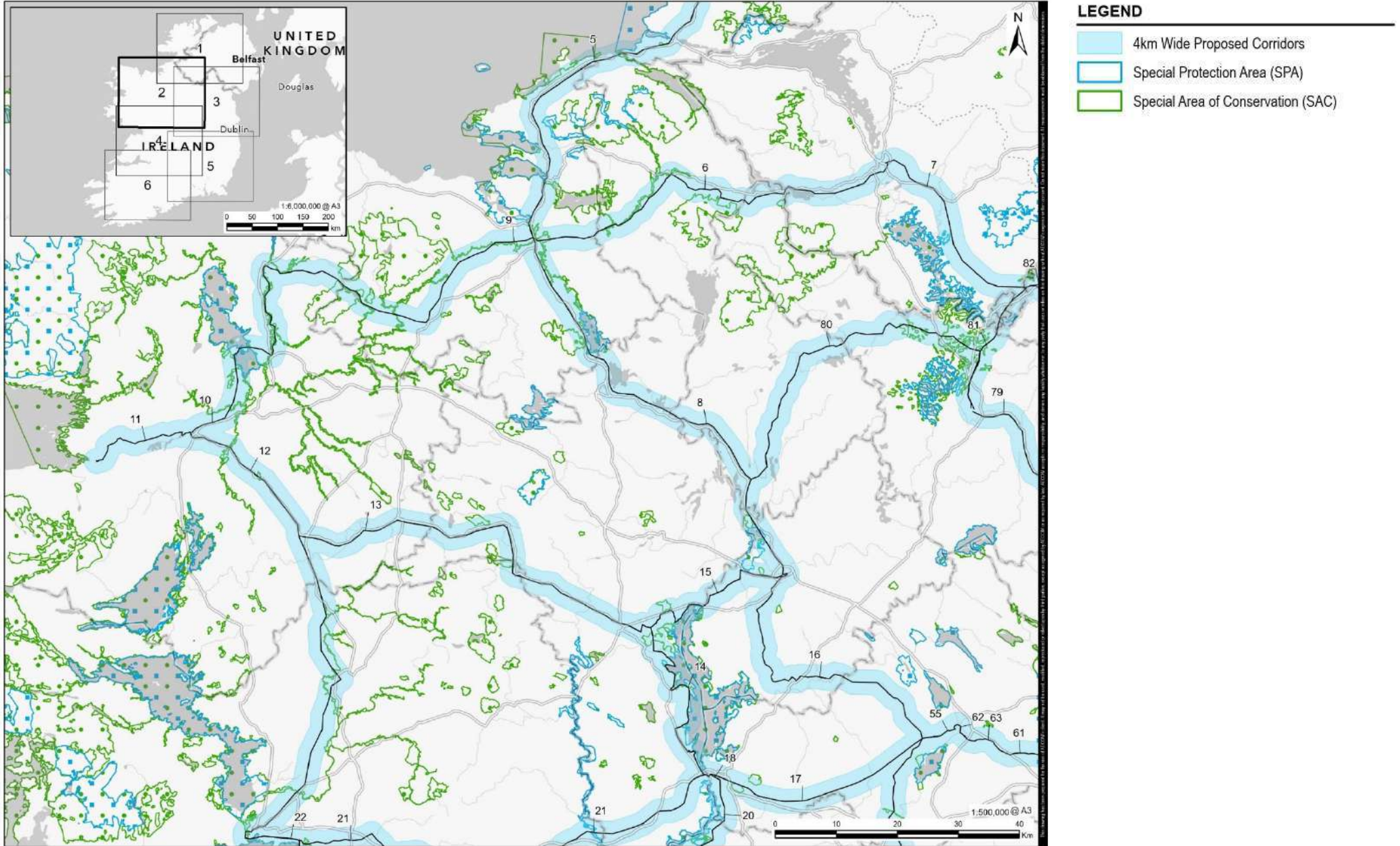
Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
8 5 Newry to Dundalk	Carlingford Shore SAC, Dundalk Bay SAC, Carlingford Mountain SAC, Carlingford Lough SPA, Dundalk Bay SPA	The 4km corridor is sufficiently wide that direct impacts on any European sites can be avoided if necessary. Therefore, while noise and visual disturbance impacts, and air quality impacts (if construction was required) could arise if the final route ran within 200m of a European site, these impacts are avoidable through either routing decisions or decisions regarding how the relevant sections of	The final route alignment should avoid any new construction within 200m of any European sites as a first preference. Where European sites are to be traversed existing roads and bridges should be used to carry the cycle route where feasible and there should be no new lighting introduced in areas that are currently unlit unless it can be demonstrated that there would be no adverse effect on site integrity. Where the cycle route will traverse a European site there will also be a need for consideration at the project level of any detailed design requirements (such as prevention of access) that will assess the potential impact of any possible net increase in recreational access to, or pressure within, the European site and determine if it is considered acceptable. If any new construction within 200m is needed to create the cycle route a noise and air quality assessment (and potentially noise and air quality mitigation) will be required to ensure there is no construction-related disturbance that could significantly affect SPA birds or significant air pollution impacts on sensitive habitats. Parts of the 4km corridor lie within 2km of an SPA. There will therefore need to be consideration of any potential for loss of functionally-linked habitat for SPA birds once the actual cycle route is determined. This will only be required if new construction is required within natural habitats and loss of habitat is greater than trivial; this is relevant because very little land is required for a cycle route. In such a situation wintering bird surveys to determine use of the habitats by SPA birds may be required and, if necessary, appropriate mitigation provided to ensure no adverse effect on the integrity of the European site before the works are consented.

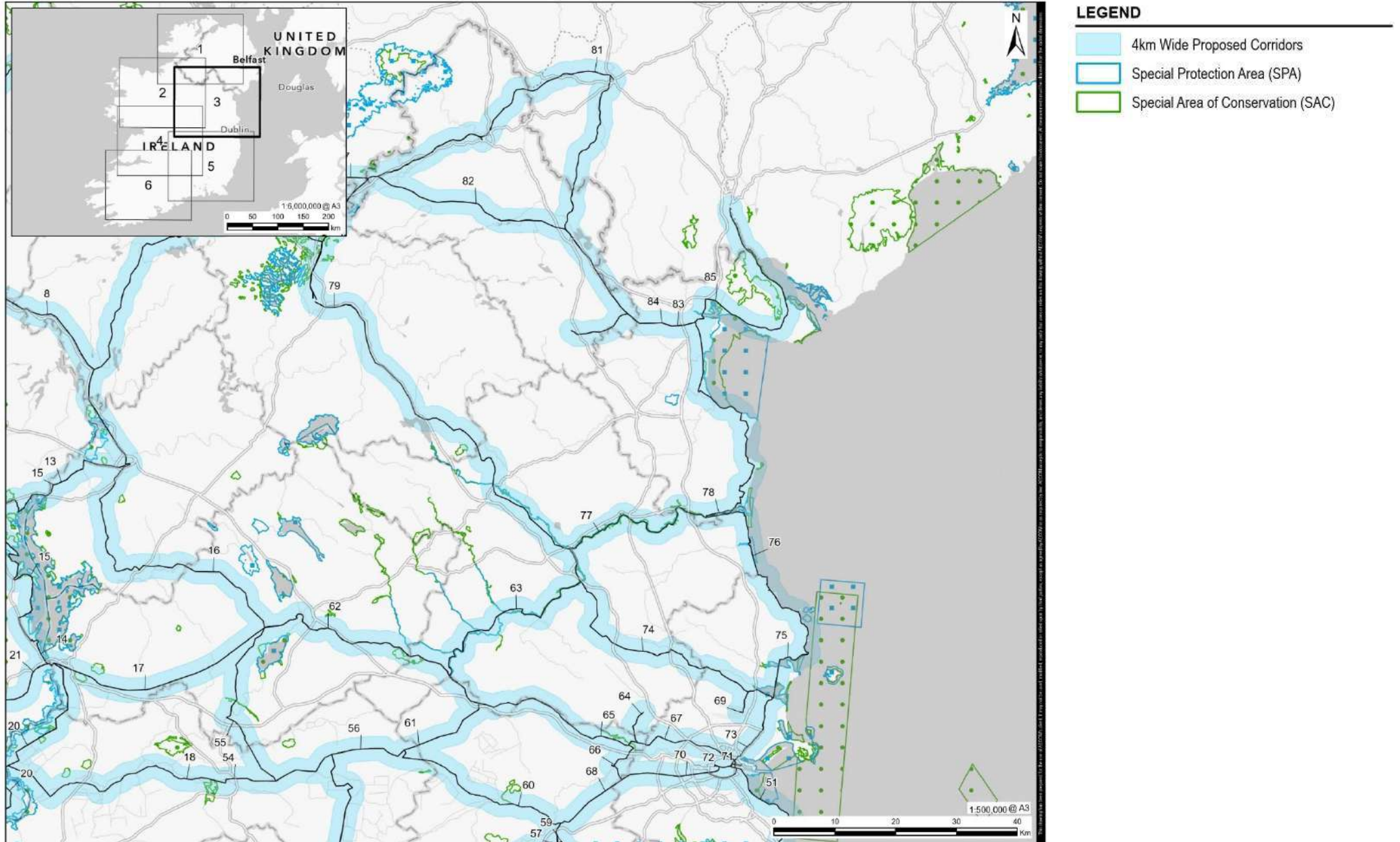
Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		<p>cycle route will be created (e.g. utilising existing infrastructure rather than creating new infrastructure in the most constrained sections, or using standard mitigation methods). Part of the 4km corridor lies within 2km of Dundalk Bay SPA and Carlingford Lough SPA. Since these sites are designated for mobile species that may make use of habitat outside the SPA boundary there is potential for any new cycle</p>	

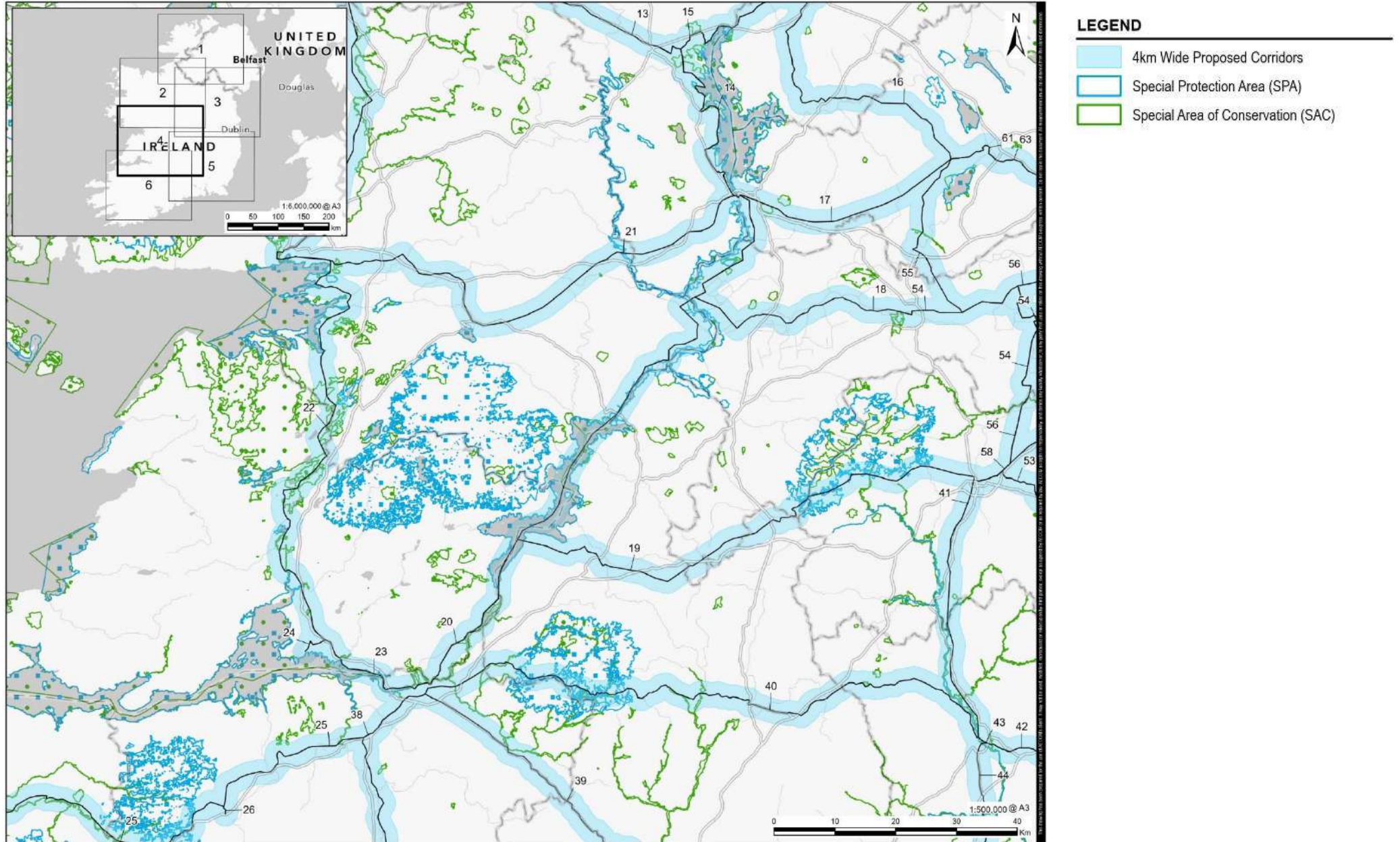
Corridor Number and Name	European Sites wholly or partially within the 4km NCN Proposed Corridor	Consideration of potential impacts	Mitigation approach for Corridor
		route construction in this location to affect functionally-linked land for SPA birds outside the SPA boundary.	

# Appendix D European Sites and NCN Corridors

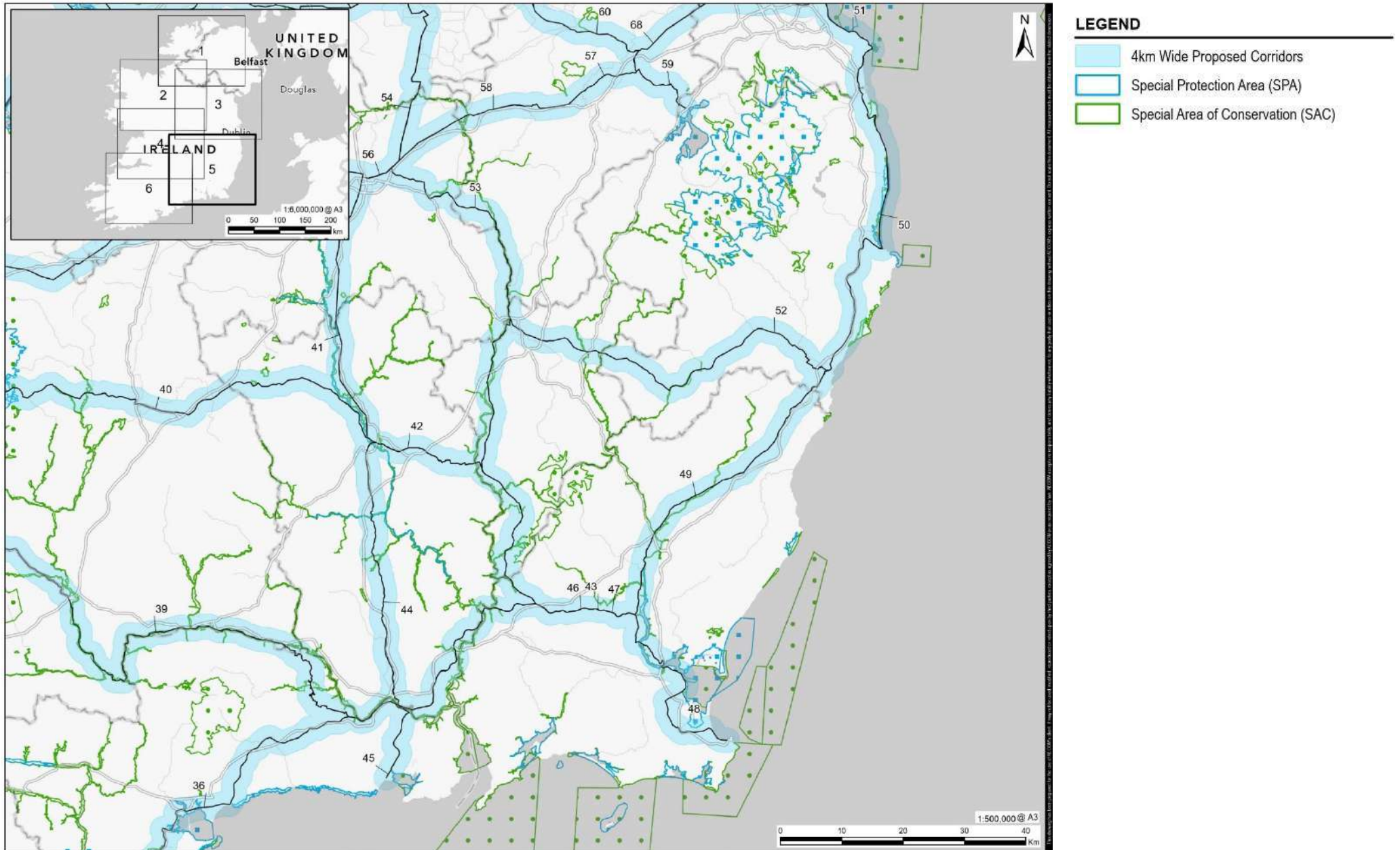


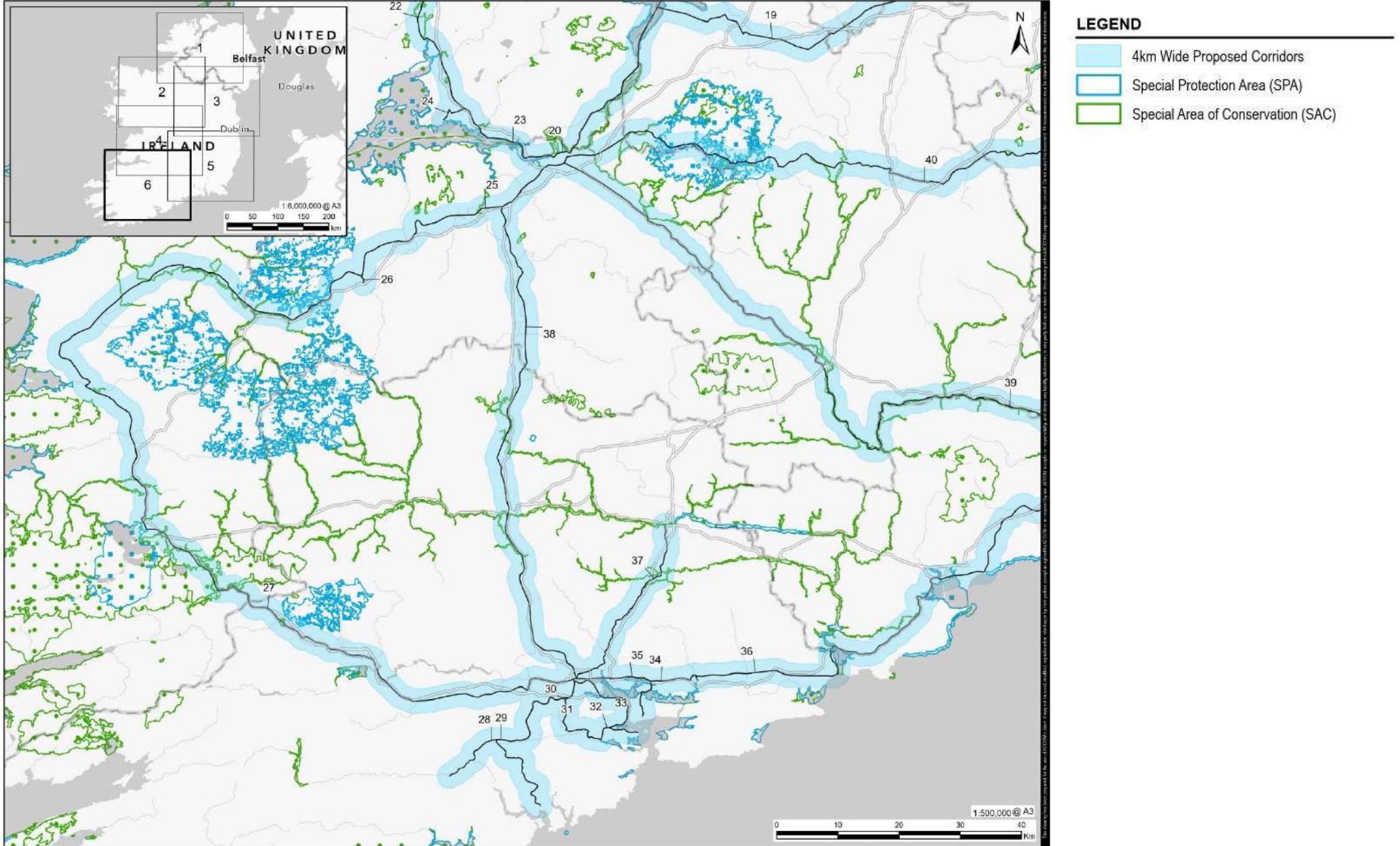














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