NRA
National Roads Authority
An tÚdarás um Bóithre Náisiúnta

National Roads Authority

Environmental Impact Assessment of National Road Schemes – A Practical Guide

Revision 1, 20 November, 2008

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Revision

This document was revised to align it with changes to legislation, best practice and policy requirements with regard to Environmental Impact Assessment arising since its original publication in 2005.

The revisions incorporate a number of relevant legislative changes, including those brought about through the Planning and Development (Strategic Infrastructure) Act, 2006; the Roads Act, 2007; the Road (Schemes) (Forms) Regulations, 2008 (S.I. No. 49 of 2008), and the Waste Management Act, 1996-2008.

With regard to best practice and policy requirements, the document now incorporates and cross references a number of new and revised NRA planning and construction guidelines. These guidelines include: *Guidelines for the Management of Waste from Road Construction Projects* (National Roads Authority, 2008); *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (Revision 2, National Roads Authority, 2008); *Traffic and Transport Assessment Guidelines* (National Roads Authority, September 2007); *Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes* (National Roads Authority, 2006), and the *Project Appraisal Guidelines* (National Roads Authority, 2008).

The document also accommodates the requirements of the *National Development Plan, 2007-2012, Transport 21, National Climate Change Strategy, 2007-2012* and *2020 Vision – Sustainable Travel and Transport*.

Preface

The guidelines are primarily aimed at the EIA practitioner in local authorities and National Road Regional Design Offices, as well as consultants. It is envisaged that the guidelines will be of practical benefit to those involved in preparing road EISs and, with this in mind, the Appendices to the document set out additional useful information, including contact details for relevant consultees, consolidated legislation, and sources of further relevant information. The guidelines will also be of interest to the statutory consultees (i.e., bodies that must be consulted as part of the EIA process), Non-Government Organisations as well as the public and should facilitate their enhanced participation in the EIA process.

The guidelines do not attempt to reproduce the work of the statutory EPA Guidelines and so should be read in conjunction with the EPA documents. In addition, the guidelines are not intended to provide advice on specialist studies. A number of publications exist providing such specialist advice, including the NRA's specialist guidelines on various environmental issues such as ecology, noise and landscaping, among others.

Disclaimer

Acknowledgements

The Authority wishes to express its thanks to the Department of Transport; the Department of the Environment, Heritage and Local Government; Environmental Protection Agency; Kildare NRRDO; Dermot Flanagan, SC, and to many others for commenting on this document. Special thanks are due to Brian Cullinane, for developing several elements of the documents and to CAAS Environmental.

CHAPTER 1

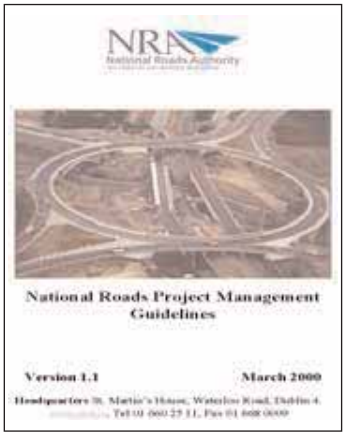
INTRODUCTION

1.0 INTRODUCTION

1.1 Introduction

The National Roads Authority (NRA) was established under the Roads Act, 1993, and given thetask *"to secure the provision of a safe and efficient network of national roads"*. The Authority's responsibilities relate to the national primary and national secondary roads, which together account for approximately 6% of the total public road network of the country.

The statutory procedures followed by the NRA and local authorities/National Road Regional Design Offices (NRRDOs) in the planning, design and implementation of national road schemes are specified in the Roads Act, 1993, as amended by the European Communities Environmental Impact Assessment (Amendment) Regulations, 1999; the Planning and Development Act, 2000; the Planning and Development (Strategic Infrastructure) Act, 2006, and the Roads Act, 2007.



The statutory Environmental Impact Assessment (EIA) process is the framework within which environmental considerations are effectively integrated into national road scheme planning. This is complemented by the NRA's *National Roads Project Management Guidelines (NRPMG)* which place an emphasis on the identification and avoidance of environmental impacts in the early stages of project planning and design. This process occurs prior to taking the project through the statutory procedures, including, where appropriate, the preparation of the Environmental Impact Statement. The NRPMG also make extensive provision for public consultation in the road planning process at a much earlier stage than required by statutory procedures. A key objective of the Guidelines is to ensure the efficient delivery of the national roads programme in a manner that minimises adverse environmental effects and respects all relevant legislation.

1.2 National Roads Project Management Guidelines

In the NRPMG[1], planning for road schemes is divided into four phases culminating in the statutory procedures.

Phase 1 involves the overall planning of the scheme, including:

- defining the road need,
- obtaining NRA formal approval to undertake the further phases,
- setting out to incorporate the objective of providing the road scheme in the local authority development plan.

Phases 2 and 3, the Constraints and Route Corridor Selection studies, are two fundamental components of the EIA process primarily concerned with the early identification and avoidance of significant adverse environmental impacts (i.e. where feasible) and the consideration of alternative route options.

[1] *Appendix 1 outlines the phases of road scheme development and implementation as contained in the National Road Project Management Guidelines*

Phase 4 includes the preparation of the Environmental Impact Statement (EIS) for the preferred route, where required. As the scheme progresses through the stages (from 2-4), the area of study generally decreases and becomes more focused, while the level of detail in the study increases.

Extensive public consultation is catered for during the early planning stages (2-4). It should be noted that public involvement at these stages takes place much earlier than is required by the statutory EIA framework set out in the Roads Act, which stipulates that public consultation begins only when the Compulsory Purchase Order/Motorway Scheme has been made and the EIS is published.

1.3 Environmental Impact Assessment

Environmental Impact Assessment (EIA) is defined as

> *the process of examining the environmental effects of the development – from consideration of the environmental aspects at design stage, through to the preparation of an Environmental Impact Statement, evaluation of the EIS by a competent authority and the subsequent decision as to whether the development should be permitted to proceed, also encompassing public response to that decision.*

The Environmental Impact Statement (EIS) is defined as *"a statement of the effects, if any, which the proposed development, if carried out, would have on the environment"* (Environmental Protection Agency, 2002). Certain public and private projects that are likely to have significant effects on the environment are subject to EIA requirements derived from EIA Directive 85/337/EC (as amended by Directive 97/11/EC). The requirements of Directive 2003/4/EC on public access to environmental information took effect from June 2005. This Directive further strengthens provisions for ensuring public access to environmental information. Insofar as roads are concerned, the EIA Directive is transposed into law in Ireland through the Roads Act, 1993 (No. 14 of 1993).

The current requirements for EIA are set out in Part IV of the Roads Act, 1993, and Part V of the Roads Regulations, 1994 (S.I. No. 119 of 1994). In particular, sections 50 and 51 of the Act, as amended, deal with EIA. These sections have been subject to significant amendment through the European Communities (EIA) (Amendment) Regulations, 1999; the Planning and Development Act, 2000; the Planning and Development (Strategic Infrastructure) Act, 2006, and the Roads Act, 2007. A consolidated version of section 50, dealing with the preparation and content of the Environmental Impact Statement, is reproduced in **Appendix 2**. The 1999 amendment emphasises the need to consider significant environmental impacts in specific environmentally sensitive locations. EIA is required for prescribed projects and other projects that, by reason of their **nature**, **extent or location**, are likely to have significant effects on the environment.

The EIA methodology promotes a practical and dynamic process of environmental protection that allows significant adverse impacts to be avoided or mitigated throughout the entire planning and design process. Road planning and design is an **iterative process** where planning and design evolve in response to environmental and other considerations. This ensures that environmental considerations become an integral part of the overall route corridor selection and road scheme planning and design process.

An EIS is prepared as part of the application for development consent. It provides environmental information that is assessed by the competent authority - An Bord Pleanála - to determine whether or not to grant consent. In 2002, as required by the 1992 Environmental Protection Agency (EPA) Act, the EPA published *'Guidelines on the Information to be Contained in an Environmental Impact Statement'*. These guidelines, which have incorporated the principles and requirements of EU guidance on EIA (see Box 1), have a statutory basis and regard must be taken of them, in line with the EPA Act, by those preparing and evaluating Environmental Impact Statements.[2]

1.4 Why Have Road EIA Guidelines?

The number and scale of national road schemes has increased in recent years leading to a significant increase in the number of EISs to be prepared for road schemes. Increasingly, road scheme EISs are being required to address complex environmental interactions. The NRA, NRRDOs and local authorities have built up considerable experience in the EIA process. These Guidelines will help in ensuring that the lessons learned from these experiences are integrated into future best practice in relation to EIA for road schemes.

National road schemes, by their nature, tend to be large, high profile projects extending over a substantial geographical area. These schemes generally attract a high level of public interest, and in some cases this has developed into formal legal proceedings through the Irish Courts or the initiation of complaint proceedings with the European Commission. While opposition to national road schemes may arise for a number of reasons, experience indicates that when a challenge is mounted, it is the Environmental Impact Statement or the Environmental Impact Assessment process that is frequently the focus of attention.

The planning of national road schemes differs fundamentally from other types of development in three principle ways:

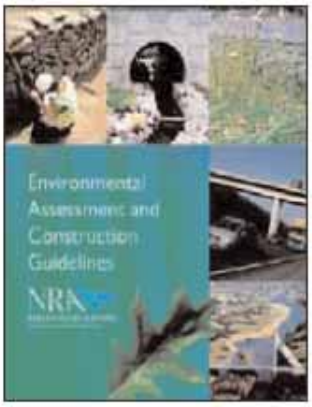
- Road projects occur over long distances that typically cross through a number of different environmental settings.
- Identification of significant environmental resources and avoidance of environmental impacts is achieved during the constraints and route selection stages.
- An EIS for a road scheme needs to allow sufficient scope to cater for procurement methods that sometimes provide scope for design input by the contractor after development consent has been obtained. This may often involve the use of innovative methods by the contractor to mitigate significant environmental impacts.

It is for these reasons that the development of specific guidance for the preparation of a road EIS is warranted. The objective of this guidance is to ensure that road EIAs continue to follow correct statutory procedures while at the same time achieving quality and consistency in the identification and mitigation of environmental impacts. Chapter 2 deals with the first step in the EIA process, screening of road projects to ascertain if it is necessary to carry out EIA. This is followed by a chapter dealing with the information requirements for a road scheme EIS and the scoping process. Chapter 4 addresses the detailed issues involved in preparing an actual roads EIS in terms of how

[2] *Environmental Protection Agency Act, 1992, Section 72*

information is presented on the core issues of project description, the existing environment and environmental impacts. Chapter 5 deals with environmental impact mitigation measures. Issues relating to the publication and dissemination of the EIS are discussed in Chapter 6. Finally Chapter 7 discusses some key environmental policy issues which should be considered in the EIA process for National Road Schemes.

The approach taken throughout the guidelines is to describe the regulatory requirements for each stage of the EIA process and for each part of the EIS and to identify common issues in a road EIS. This is supplemented by a number of case studies and relevant references to other documents that are highlighted through a series of text boxes and which draw attention to examples of good practice using examples from actual road EISs. EIA practice has evolved substantially since the introduction of the EIA Directive in 1985. Practice continues to evolve taking into account the growing body of experience gained from carrying out EIAs in the national roads sector and the development sector generally. These guidelines have been produced in folder format so that further information can be added, taking into account evolving EIA practices and experiences and ongoing changes to the legislative framework within which the EIA process operates.



Box 1 – Other Relevant EIA Guidance

IRISH

Guidelines on Information to be Contained in an Environmental Impact Statement EPA March 2002.

Environmental Impact Assessment (EIA), Guidance for Consent Authorities regarding Sub-Threshold Development
The Department of the Environment, Heritage and Local Government, August 2003.

Advice Notes On Current Practice (in preparation of Environmental Impact Statements) EPA, September 2003.

NRA Environmental Assessment and Construction Guidelines NRA, 2004.

EU

Guidance on EIA Screening
DG Environment June 2001.

Guidance on EIA Scoping
DG Environment June 2001.

EIA Review Checklist
DG Environment 2001.

Study on the Assessment of Indirect & Cumulative Impacts as well as Impact Interaction
DG Environment 2002.

CHAPTER 2

SCREENING - Which Road Projects Require an EIS?

2.0 SCREENING - Which Road Projects Require an EIS?

2.1 Introduction

One of the earliest tasks in planning a road scheme is to determine whether or not it should be subject to EIA.

'Screening' is the term used to describe the process of ascertaining whether a road scheme requires an EIA and is determined by reference to mandatory and discretionary provisions set out in the Roads Act, 1993, as amended by: the Roads Regulations, 1994; the EIA (Amendment) Regulations, 1999; the Planning and Development Act, 2000; the Planning and Development (Strategic Infrastructure) Act, 2006, and the Roads Act, 2007.

> ***Screening** is the process of assessing the requirement of a project to be subject to Environmental Impact Assessment, based on project type and scale and on the significance or environmental sensitivity of the receiving environment.*
>
> *Guidelines on the Information to be Contained in an EIS,* EPA, 2002

The overriding consideration in determining whether a road scheme should be subject to EIA is the likelihood of significant environmental effects. Significant effects may arise by virtue of the type of road scheme, the scale or extent of the road scheme and the location of the road scheme in relation to sensitive environments.

In interpreting which projects are likely to have significant environmental effects, the EIA Directive lists those projects for which EIA is mandatory (Annex I) and those projects for which EIA may be required (Annex II). With regard to Annex II projects, Member States can choose to apply thresholds or use case by case examination or a combination of both to assess whether these projects require EIA. For road schemes in Ireland, a combination of both is used.

Table 1 provides an overview of the legislative requirements that determine whether a road scheme will require an EIA.

Table 1: Summary of Legislative Requirements for EIA Screening

Mandatory		Regulatory Reference[3]
(1) Construction of a motorway.		S. 50(1)(a) of the Roads Act, 1993, as substituted by S. 9(1)(d)(i) of the Roads Act, 2007.
(2) Construction of a busway.		S. 50(1)(a) of the Roads Act, 1993, as substituted by S. 9(1)(d)(i) of the Roads Act, 2007.
(3) Construction of a service area.		S. 50(1)(a) of the Roads Act, 1993, as substituted by S. 9(1)(d)(i) of the Roads Act, 2007.
(4) Any prescribed type of proposed road development consisting of the construction of a proposed public road or the improvement of an existing public road, namely:	The construction of a new road of four or more lanes, or the realignment or widening of an existing road so as to provide four or more lanes, where such new, realigned or widened road would be eight kilometres or more in length in a rural area, or 500 metres or more in length in an urban area;	Article 8 of the Roads Regulations, 1994 (Road development prescribed for the purposes of S. 50(1)(a) of the Roads Act, 1993).
	The construction of a new bridge or tunnel which would be 100 metres or more in length.	Article 8 of the Roads Regulations, 1994 (Road development prescribed for the purposes of S. 50(1)(a) of the Roads Act, 1993).

Mandatory		Regulatory Reference[3]
(5) Where An Bord Pleanála (ABP) considers that a proposed road development would be likely to have significant effects on the environment it shall direct the road authority to prepare an EIS.		S. 50(1)(b) of the Roads Act, 1993.
(6) Where a road authority considers that a proposed road development would be likely to have significant effects on the environment it shall inform ABP in writing and where ABP concurs it shall direct the road authority to prepare an EIS.		S. 50(1)(c) of the Roads Act, 1993.
(7) Where a proposed road development would be located on certain environmental sites[4] the road authority shall decide whether the proposed road development would be likely to have significant effects on the environment. "The sites concerned are":	(i) Special Area of Conservation (SAC)	S. 50(1)(d) of the Roads Act, 1993, as inserted by Art. 14(a) of the EIA (Amendment) Regulations, 1999.
	(ii) A site notified in accordance with Regulation 4 of the European Communities (Natural Habitats) Regulations, 1997 (S.I. No. 94 of 1997)	
	(iii) Special Protection Area	
	(iv) A site where consultation has been initiated in accordance with Article 5 of Council Directive 92/43/EC of 21 May, 1992, on the conservation of natural habitats and of wild flora and fauna.	
	(v) A Nature Reserve within the meaning of sections 15 or 16 of the Wildlife Act, 1976.	
	(vi) Refuge for Fauna under section 17 of the Wildlife Act, 1976.	
If the road authority considers that significant environmental effects are likely, it shall inform ABP in accordance with section 50(1)(c).		

[3] *It should be noted that sections 50 and 51 of the Roads Act, 1993, have been amended by the European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1999; the Planning and Development Act, 2000; the Planning and Development (Strategic Infrastructure) Act, 2006; and the Roads Act, 2007. A consolidated version of section 50, dealing with the requirements for the EIS, is reproduced in Appendix 2.*

[4] *While the Roads Act refers to proposed road development located on an environmentally sensitive site, significant environmental impacts may potentially arise as a result of a project's location in proximity to a sensitive environmental site, see section 2.3.3.*

2.2 Mandatory Triggers Requiring an EIS

As Table 1 indicates, there are a number of different ways by which the requirement for EIA can be triggered. It is possible that a proposed road scheme meets more than one of the mandatory triggers requiring EIA. In any event, it is important that each trigger for EIA is clearly set out in the EIS.

In a situation where a road scheme meets more than one of the triggers for EIA, e.g., a 10km four lane motorway with a new bridge/tunnel 120m in length, it is important that the EIS clearly specifies all the grounds on which EIA is required, including the construction of the new bridge/tunnel. The EIS should detail the environmental effects and mitigation measures associated with the motorway and bridge/tunnel.

There may be situations where a proposed scheme includes a section of road which would not in itself trigger an EIA but the scheme involves the construction of a new bridge/tunnel greater than 100m or more in length. In this situation, the bridge/tunnel would trigger an EIS, and it is important that the road component and the bridge/tunnel component are seen as part of the overall scheme for the purposes of EIA. However, it should be made clear in the EIS that the bridge/tunnel is the trigger for the EIA. Clear reference to the bridge/tunnel should also be made in any public notifications associated with the scheme, including statutory notifications. In addition, as the bridge/tunnel is the trigger for EIA, and therefore considered likely to have significant environmental effects, the EIS should clearly deal with the environmental impacts and mitigation measures associated with the bridge/tunnel and road component in detail.

2.3 Sub-threshold Requirements

While the mandatory requirements for EIA for road schemes are straight forward, being based on type (motorway) and scale (8kms or more of four lane road), the discretionary (or subthreshold) requirements are based on an assessment of the likely significant environmental effects of the proposed road development. The Department of the Environment, Heritage and Local Government has produced guidance on sub-threshold EIA requirements, *Guidance for Consent Authorities regarding Sub-threshold Development* (Department of the Environment, Heritage and Local Government, August 2003).

2.3.1 Direction to Prepare an EIS

In relation to sub-threshold schemes, it is important to note that in a situation where a proposed road development is likely to have significant environmental effects, **only An Board Pleanála can issue a direction for an EIS to be prepared.** A road authority cannot decide to prepare an EIS (i.e. under the relevant statutory procedures) for a sub-threshold scheme but must inform the Board where it considers it likely that significant environmental effects will occur. **Where the Board concurs, the Board then issues a direction to the road authority to prepare an EIS.** It is important to note that the Board may decide not to concur with the position of the road authority, and in this situation the Board would not issue a direction to prepare an EIS. In this situation there is no requirement on the road authority to publicly notify the basis for considering that a proposed road development is likely to have significant environmental effects.

2.3.2 Criteria to Determine Significance

In considering whether a sub-threshold proposed road development is likely to have significant environmental effects, the road authority and the Board, under section 50 (1) (e) of the Roads Act, must have regard to the criteria set out in article 27 of the European Communities (EIA) Regulations, 1989. This article refers to the criteria for determining whether a development would or would not be likely to have significant effects on the environment set out in Annex III to the EIA Directive, as amended. These criteria are grouped into three categories as set out below and are reproduced in Box 2:

(i) Characteristics of the proposed development
(ii) Location of proposed development
(iii) Characteristics of the potential impacts.

Box 2 – Third Schedule to the 1989 EIA Regulations – Significance Criteria for Screening

1. Characteristics of the proposed development

The characteristics of the proposed development, in particular:

- the size of the proposed development
- the cumulation with other proposed development
- the use of natural resources
- the production of waste
- pollution and nuisances
- the risk of accidents, having regard to substances or technologies used.

2. Location of proposed development

The environmental sensitivity of geographical areas likely to be affected by proposed development, having regard in particular to:

- the existing land use
- the relative abundance, quality and regenerative capacity of natural resources in the area
- the absorption capacity of the natural environment, paying particular attention to the following areas:

  (a) wetlands

  (b) coastal zones

  (c) mountain and forest parks

  (d) areas classified or protected under legislation, including special protection areas designated pursuant to Directive 79/40/EEC and 92/43/EEC

  (e) areas in which the environmental quality standards laid down in EU legislation have already been exceeded

  (f) densely populated areas

  (g) landscapes of historical, cultural or archaeological significance

3. Characteristics of potential impacts

The potential significant effects of proposed development in relation to criteria set out under paragraphs 1 and 2 above, and having regard in particular to:

- the extent of the impact (geographical area and size of the affected population)
- the transfrontier nature of the impact
- the magnitude and complexity of the impact
- the probability of the impact
- the duration, frequency and reversibility of the impact

The road authority should document its deliberations in relation to the likelihood of significant environmental effects – where it is concluded that there is a likelihood of significant environmental effects, it is normal practice to submit a brief report setting out the basis of the conclusions to An Bord Pleanála.

2.3.3 Consideration of Environmentally Sensitive Sites

Proposed road developments may have significant environmental impacts by virtue of their location relative to environmentally sensitive sites. If a proposed sub-threshold road scheme would be located on one of the environmentally sensitive sites listed at 7 in Table 1, the road authority **shall** decide whether it would or would not be likely to have significant environmental impacts. Where the road authority concludes that significant environmental impacts are likely, it informs An Bord Pleanála, and, where the Board concurs, it issues a direction to the road authority to prepare an EIS. It is important to note that where the road authority considers that significant environmental effects are not likely, there is no requirement to inform the Board. However, in such circumstances, the grounds for the road authority's conclusion should be recorded.

In circumstances where a proposed scheme **is not located on but is in proximity to an environmentally sensitive site**, careful consideration needs to be given to the likelihood that there may be significant effects on such a site. The fact that a proposed development may be somewhat distant from a conservation site does not necessarily mean that it will not impact on the site. When a road authority deems that significant environmental impacts are likely to arise in such a situation, the road authority must follow the procedure outlined in section 2.3.1 to establish the requirements for an EIS.

In all cases where the road authority cannot rule out the likelihood of a significant impact on a 'European site' an appropriate assessment will be required pursuant to Article 30 of the Habitats Regulations, 1997. In this regard, the reader's attention is brought to the relevant sections of the *NRA's Guidelines for Assessment of Ecological Impacts of National Road Schemes* (Rev. 2, National Roads Authority, 2008). It should be noted that Article 30(2) of the Habitats Regulations provides that an EIA shall be an appropriate assessment for the purposes of the Regulations.

It should be noted that for all sub-threshold development, including those relating to environmentally sensitive sites, it is ultimately a matter for decision by the Board whether or not to issue a direction in relation to the preparation of an EIS. Therefore, it is possible that a road authority may conclude that a proposed road scheme is likely to have significant environmental effects but An Bord Pleanála may not concur with this conclusion, and as a consequence, may not issue a direction to prepare an EIS.

Where a decision is made under these circumstances (i.e. whether a sub-threshold development located on an environmentally sensitive site would or would not be likely to have significant effects on the environment) the road authority is obliged (under S. 50 (1)(f) of the 1993 Act) to make the decision available for inspection by members of the public.

A summary of the screening process for national road schemes is set out in Figure 1.

The inclusion of significance criteria in the 1997 amendment to the EIA Directive has had the effect, inter alia, of interlinking the EIA Directive with nature conservation legislation, in particular, the Habitats and Birds Directives.

In addition to sites designated under national nature conservation legislation, there are more than 500 sites designated under the Habitats or Birds Directives, for which the main implementing legislation in Ireland is the European Communities (Natural Habitats) Regulations (S.I. 94 of 1997). These site designations can be altered and new sites can be added from time to time. In addition, it should be noted that protected species can occur outside designated sites. As a result, nature conservation issues are an important consideration in determining the potential for likely significant environmental effects arising from a road scheme and the requirement for EIA. Further information on designated sites and protected species can be found in the NRA's Ecology Guidelines (Rev. 2, National Roads Authority, 2008).

Consultation with the National Parks and Wildlife Service (NPWS) of the Department of the Environment, Heritage and Local Government, and Regional Fisheries Boards is an important part of the planning and design of national road schemes. Given the complexity and dynamic state of nature conservation designations, it is particularly important that the road authority consults with the NPWS and the relevant Regional Fishery Board when considering whether a sub-threshold proposed road development is likely to have significant environmental effects by virtue of its location. A list of contacts for the NPWS and the Regional Fisheries Boards is provided in **Appendix 3.**

The case study in Box 3 highlights the issues and procedures involved in considering whether a sub-threshold roads scheme is likely to have significant environmental effects, including effects that may arise as a result of its location in proximity to an environmentally sensitive site.

Box 3 – Case Study – EIS for Sub-Threshold Scheme
N52 Tullamore Bypass

During the initial assessment of the scheme by Offaly County Council in 1999 a number of broad route corridors were examined. After preliminary studies, these were reduced to three corridors. The scheme was to be constructed to single carriageway standard with the three options ranging from 14–17 km in length. On the basis of road type and length, the preparation of an EIS was not mandatory.

A preferred route was selected after considering a range of environmental, engineering and economic factors. The route passed along the edge of Charleville Wood, a proposed Natural Heritage Area (pNHA) at the time. During the planning process, Charleville Wood was proposed as a candidate Special Area of Conservation (cSAC). It was also proposed to extend the area of the designation to include an area known as Black Wood. This attached a higher and international level of conservation status and protection to the site compared to its pNHA status prior to the commencement of planning. As a result, it was not considered feasible, for environmental reasons, to proceed with the preferred route.

Following consultation between Offaly County Council and the National Parks and Wildlife Service (NPWS), a modified preferred route was developed incorporating an on-line upgrade of the existing N52 through Charleville Demesne in order to minimise the impact on the cSAC. As part of the consultation, points at which the modified route would impact on the cSAC were identified and mitigation measures developed in agreement with the NPWS. Although the proposed road did not meet the thresholds requiring an EIA, the Council considered the likelihood of significant environmental effects from the scheme by virtue of its location on an environmentally sensitive site and having regard to the requirements of Section 50 (1)(d) of the Roads Act, 1993. The Council concluded that significant effects were likely and, in August, 2001, informed An Bord Pleanála of its conclusions in accordance with section 50 (1)(c) of the Act. Specifically, the Council pointed out that the provision of a bypass had potential for significant effects on the environment due primarily to interference with Charleville Wood and the wooded and amenity areas generally to the south-west of the town, as well as the visual impact of the crossing over the Grand Canal. Potential impacts on other sites of less ecological interest, such as the Eskers to the North and bogland areas, were also referred to.

In March 2002 the Board directed the Council to prepare an EIS in accordance with section 50 (1)(b) of the Roads Act, 1993.

2.4 Changes to Approved Road Development

The 1997 amendment to the EIA Directive introduced a new project category in Annex II (Annex II lists projects which may be subject to EIA).

Class 13 of Annex II indicates that EIA may be required where: *"any change or extension of projects listed in Annex I or Annex II, already authorised, executed or in the process of being executed, which may have significant adverse effects on the environment"*.

Applied to roads, Class 13 provides that where there is a change or extension to a road development that has already received statutory approval, has completed construction or is under construction (or proceeding to construction) and that change or extension may have significant adverse effects on the environment, a new EIA is required. This implies that changes can be made

to an approved road scheme without requiring a new EIA where those changes do not give rise to significant environmental impacts. Changes to a road scheme may occur, for example, when during the course of construction conditions are encountered (not foreseen in the EIS) that necessitate a change or modification to the design. However, it is worth noting that approval of proposed road development has two strands – the EIS and Compulsory Purchase Order (CPO) or Motorway Scheme (MS). The flexibility implied in Class 13 of Annex II of the EIA Directive is not replicated in the CPO/MS procedures so that changes can only be considered within the constraints of the land-take as set out in the approved CPO/MS. Accordingly, any additional land required to accommodate scheme changes outside the scope of the approved CPO/MS will necessitate new statutory procedures or the acquisition of the necessary land through agreement with the land owner.

The case study in Box 4 provides an example of the issues involved in considering whether a change to a scheme already approved under the statutory EIA procedures requires a new EIA.

Box 4 – Case Study – Changes or Extensions to Approved Schemes
M50 South Eastern Motorway at Carrickmines

In August, 2002, the National Roads Authority and Dún Laoghaire Rathdown County Council agreed a number of measures to be implemented at the Carrickmines site on the M50 South Eastern Motorway so as to enhance the extent of archaeological features to be preserved insitu. The EIS and Motorway Scheme had been approved by the Minister for the Environment and Local Government in 1998. The proposed measures involved minor modifications to the design of the road in the vicinity of the Carrickmines site, in particular to a roundabout off the motorway intended to cater for local traffic.

Following the announcement of the measures, an application was made by a member of the public requesting An Bord Pleanála to direct the local authority to carry out an EIS for the proposed measures. It was argued that the measures, which involved minor tilting and raising of a link road and roundabout by a maximum of 1.5m, would have "a significant negative impact on the environment of inter alia Carrickmines Castle and Priorsland House and the surrounding attendant grounds and settings of the same".

In response, the road authority pointed out that the EIS for the scheme was approved in 1998 as part of the statutory approval process and that the purpose of the new measures was to further preserve archaeology at the Carrickmines site. The road authority also submitted that the provisions of Class 13 of Annex II of the EIA Directive (No. 97/11/EC) (see section 2.4) would only be relevant where the nature and scale of any proposed variations to an approved scheme would be such as to constitute substantial material change which would give rise to significant adverse environmental effects. It was argued that the modifications being proposed would not entail significant adverse effects but would have beneficial effects through the further preservation of archaeology at the site and, in addition, that the changes concerned were modest in nature in the context of the scale of the overall motorway scheme.

An Bord Pleanála refused the application for a direction to prepare an EIS. It concluded that the proposed modifications did not significantly alter the proposed road development from that previously approved. It also went on to say that the proposed modifications would not of themselves have significant adverse effects on the environment and accordingly do not comprise a project specified at paragraph 13 of Annex II of the EIA Directive (as amended). In coming to its conclusions, the Board had regard to the significance criteria set out in Annex III of the EIA Directive.

2.5 Environmental Considerations Where No EIA Is Required

Section 179 of the Planning and Development Act, 2000, specifies a procedure to be applied to certain prescribed developments that do not require EIA. These development types are prescribed in Part 8 of the Planning and Development Regulations, 2001. The following types of road development come within the scope of Part 8:

- The construction of a new road or the widening or realignment of an existing road where the length of the new road or the widened or realigned portion of the existing road, as the case may be, would be:

  (a) in the case of a road in an urban area, 100m or more, or;
  (b) in the case of a rural road, 1km or more.

- The construction of a bridge or tunnel.

Where such a project is unlikely to have significant effects on the environment (see section on sub-threshold provision), the Planning and Development Act requires that a report be prepared setting out, among other things, an evaluation of whether or not the proposed development would be consistent with the proper planning and sustainable development of the area.

For such schemes it is normal practice to prepare an Environmental Report or an appropriate evaluation as described by the EPA Guidelines[5]. The purpose of this is to assist the route selection process and to come to well informed decisions in this regard taking account of relevant environmental considerations. The EPA Guidelines indicate that the evaluation should generally observe both the structure and methodologies adopted for an EIS.

2.6 Requirement for EIA under Section 14B of the National Monuments Act 1930 (as amended).

The National Monuments (Amendment) Act, 2004, amends the National Monuments Act, 1930, to provide for a situation where an EIS may be required in relation to a changed portion of an already "approved road development", which is defined as a road development approved under either or both sections 49 and 51 of the Roads Act, 1993.

Section 5 of the 2004 Act substitutes new provisions for section 14 of the 1930 Act. Under section 14A(3) of these provisions, the possibility of having to prepare an EIS for the altered section of a previously approved Road Scheme only arises where a national monument is discovered subsequent to the approval of the road by An Bord Pleanála and where neither that approval nor the original EIS deals with the National Monument Concerned. In such circumstances, the Minister for the Environment, Heritage and Local Government may issue directions under section 14A(4)(d) requiring, inter alia, the preservation of the monument or its excavation and preservation by record.

The road authority must inform An Bord Pleanála of any directions issued by the Minister and of any change to the approved road development that, it is satisfied, is necessitated by the Ministerial directions. The Board will then determine whether as a consequence of the directions, there is a material alteration to the approved road development. Where it determines no material alteration arises, it will so notify the road authority. Alternatively, if it determines a material alteration does arise, it will decide whether to modify the approval, for the purposes of permitting any changes to the route or design of the approved road development. An Bord Pleanála will also decide whether the material alteration is likely to have significant adverse effects on the environment, in which case it will require the preparation of an EIS by the road authority in respect of the **change** to the approved road development. An Bord Pleanála is confined to only considering the proposed change to the approved road development and nothing is to be construed as putting in question any part of the approved road scheme not affected by the directions issued by the Minister.

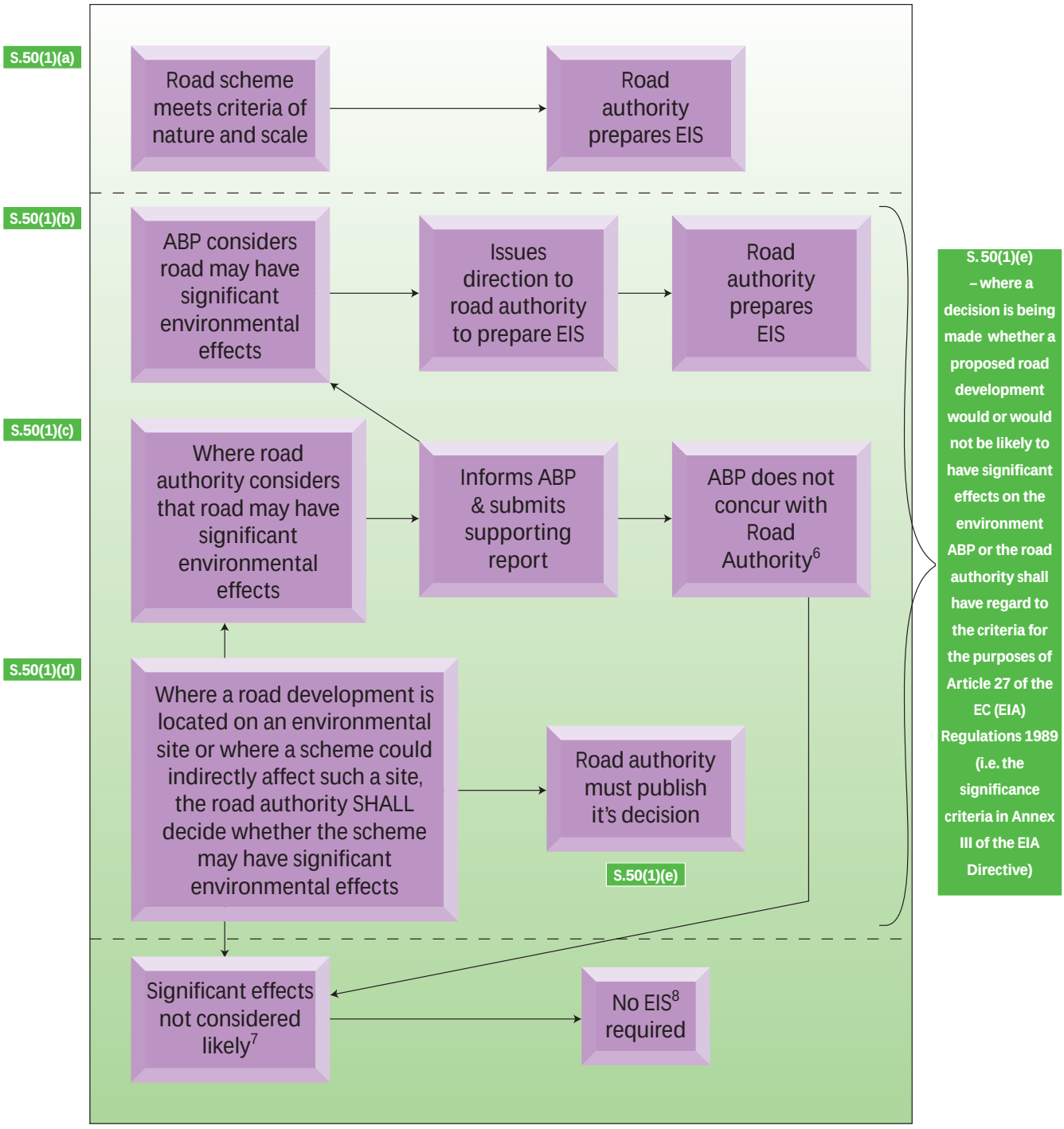
Changes to the design of the scheme on foot of a Ministerial direction in relation to a national monument may in certain circumstances be accommodated within the land-take in the approved

[5] EPA Guidelines, Section 2.4.7 – *"Where reasonable concerns exist that a single or very limited number of environmental topics may be adversely affected by a development proposal then an appropriate evaluation of the relevant topics may be carried out".*

CPO or MS. However, the change to an approved road development arising from a Ministerial direction, the effect of which requires a new land-take, will necessitate a new CPO or MS in respect of the additional land to be acquired, unless it is secured through agreement.

More generally, the requirements for the preparation of an EIS in relation to archaeology are outlined in greater details in the National Roads Authority's Archaeological Guidelines (National Roads Authority, 2005).

Figure 1: The Screening Process for EIA for a Roads Scheme



Note: only ABP can issue a direction to prepare an EIS for sub-threshold development

[6] *See Sections 2.3.1 and 2.3.3*
[7] *See Section 2.3.3*
[8] *See Section 2.5*

CHAPTER 3

EIS Information Requirements and Scoping

3.0 EIS INFORMATION REQUIREMENTS AND SCOPING

3.1 Introduction

Having determined that a proposed road scheme should be subject to the EIA process, the next stage is to decide on the scope and contents of the EIS.

Legislation and associated Regulations determine a core of key topics that must be covered as the minimum information to be contained in an EIS. These minimum requirements are set out in section 3.2.

While the requirements are expressed in general terms, each Environmental Impact Assessment is a unique interaction of the components of a specific road scheme with a specific set of environmental factors and a unique receiving environment. The process of specifying the content of an EIS is known as **Scoping**. Scoping identifies the key issues, specific to a particular project or a specific receiving environment, that are likely to be significantly impacted during EIA and eliminates those that are not. The process of scoping is examined in more detail in section 3.3.

3.2 Regulatory Requirements

An EIS should contain information on the likely significant environmental effects (both positive and negative) of a proposed road scheme and the measures proposed to mitigate those effects so as to allow a fully informed decision to be made by An Bord Pleanála.

The EIA Directive and the Roads Act, 1993, set out the general information required to be included in the EIS. Based on this, an EIS should contain descriptions of:

(a) the proposed road development comprising information on the site, design and size of the proposed road development

(b) the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects on the environment

(c) the data required to identify and assess the main effects which the proposed road development is likely to have on the environment

(d) the main alternatives studied by the road authority concerned and an indication of the main reasons for its choice, taking into account the environmental effects

(e) a summary in non-technical language of the above information.

In an effort to set out the minimum information to be contained in a road scheme EIS, sections 50(2) and (3) of the Roads Act, 1993 (as amended by the EC (EIA) (Amendent) Regulations, 1999) are reproduced below with explanatory notes in accompanying boxes.

S. 50 (2)

(a) a description of the proposed road development comprising information on the site, design and size of the proposed road development;

The objective is to provide a description in sufficient detail, which if taken together with the description of the existing environment, provides a basis for an independent reader to understand the likely significant impacts to arise from the proposed road development.

(b) a description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects;

According to EPA Guidelines, the central purpose of Environmental Impact Assessment is to identify potentially significant adverse impacts at the pre-consent stage and to propose measures to mitigate or ameliorate such impacts. There are three established strategies for impact mitigation – avoidance, reduction and remedy.

(c) the data required to identify and assess the main effects which the proposed road development is likely to have on the environment;

An accurate description of the existing environment is necessary to predict the likely significant effects of a proposed road development.

(d) an outline of the main alternatives studied by the road authority concerned and an indication of the main reasons for its choice, taking into account the environmental effects;

The avoidance of significant environmental impacts through the consideration of alternatives is a fundamental principle of EIA.

(e) a summary in non-technical language of the above information.

The EPA Guidelines describe the main requirements of a nontechnical summary. It should be a separate self-contained document from the main EIS and give a summary of all the main issues contained in the EIS. It should include maps and a graphical representation of the scheme that is easily understood by members of the public. Technical terms should be avoided where possible.

In addition to the information set out in section 50(2) outlined above, an EIS should contain further information on the following matters (see section 50(3))

> *to the extent that such information is relevant to a given stage of the consent procedure and to the specific characteristics of the proposed road development or type of proposed road development concerned, and of the environmental features likely to be affected, and the road authority preparing the environmental impact statement may reasonably be required to compile such information having regard, inter alia, to current knowledge and methods of assessment.* [9]

S. 50 (3) (a)

(i) a description of the physical characteristics of the whole proposed road development and the land-use requirements during the construction and operational phases;

It is important to describe how the process of construction impacts on the environment.

(ii) an estimate, by type and quantity, of expected residues and emissions (including water, air and soil pollution, noise, vibration, light, heat and radiation) resulting from the operation of the proposed road development.

For roads schemes, many of these residues and emissions are related to traffic levels.

S. 50 (3) (b)

- a description of the aspects of the environment likely to be significantly affected by the proposed road development, including in particular:

*Note emphasis on **likely** to be significantly affected. This phrase helps to provide a focus for scoping.*

- human beings, flora and fauna
- soil, water, air, climatic factors and the landscape
- material assets, including the architectural and archaeological heritage, and the cultural heritage

The description of any aspect of the environment should provide sufficient data to facilitate the identification and evaluation of the likely significant effects on a particular topic. Systematic, accurate and comprehensive descriptions include:

- Context - Character - Significance - Sensitivity

the inter-relationship between the above factors.

This is an important factor which may warrant a separate chapter in the EIS. Impact interactions are covered in an EU guidance document – See Box 1.

[9] *Roads Act, 1993, Section 50 (3)*

S. 50 (3) (c)
a description of the likely significant effects (including direct, indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative) of the proposed road development on the environment resulting from:

Note again emphasis only on "likely" and "significant" effects.

The difficulties associated with the identification and description of cumulative impacts led the European Commission to develop a guidance document on the subject – Guidelines for the Assessment of Indirect and Cumulative impacts as well as Impact Interactions.

That report states that from the inception of EIA it was recognized that many of the most detrimental environmental effects may not result from direct impacts from individual projects but from a combination of impacts from one development or from minor impacts generated by a number of developments. Such impacts, over time, can cause a significant impact.

See Chapter 4 and EPA Glossary of Impact Types.

- the existence of the proposed road development
- the use of natural resources
- the emission of pollutants, the creation of nuisances and the elimination of waste

and a description of the forecasting methods used to assess the effects on the environment.

It is important to use duplicable standards and replicable methods wherever possible.

S. 50 (3) (d)
an indication of any difficulties (technical deficiencies or lack of know-how) encountered by the road authority concerned in compiling the required information;

This information is useful in developing an understanding of the technical difficulties associated with EIA, providing a focus for future guidance and research.

S. 50 (3) (e)
a summary in non-technical language of the above information.

See previous note on non-technical summary.

3.2.1 Alterations to Statutory Provisions

The statutory provisions regarding the Environmental Impact Assessment of National Road Schemes are subject to periodic review and amendment. This, combined with the difficult and technical nature of the statutory provisions involved, may make it appropriate to seek professional legal advice should doubts arise. The following section outlines some of the more significant and recent alterations to the statutory provisions.

3.2.1.1 Planning and Development (Strategic Infrastructure) Act, 2006

The principal aim of the Planning and Development (Strategic Infrastructure) Act, 2006 (the 2006 Act) is the streamlining of planning procedures in relation to infrastructure development that is of critical national or regional importance. The Act, *inter alia*, significantly amends the existing approval process in relation to national road development proposals. Section 6(c) of the 2006 Act defines strategic infrastructure development to include all national road development proposals for which an EIS is required. All such strategic infrastructure development will be dealt with by the Strategic Infrastructure Division of An Bord Pleanála.

Section 51 of the 2006 Act specifies an overall period, '*not being less than 6 weeks*' to cater for both the public display/availability and the making of objections/submissions to An Bord Pleanála. The section concerned made certain amendments to section 48 and 51 of the Roads Act, 1993. Subsequent changes, involving the substitution of a new section 48, were introduced by section 9(1)(b) of the Roads Act, 2007. The new procedures replace those applying previously under which the statutory documents for national road development proposals, including EISs, were made available to the public for a period of at least four weeks with a separate period of a further two weeks allowed for making objections/submissions to the Board.

Section 30 of the 2006 Act enables An Bord Pleanála to amend its decisions, including those related to national road development proposals and associated EISs. The purposes of such amendments appear, however, to be restricted to addressing drafting/formatting aspects of Board decisions.

Section 38 of the 2006 Act confers significant powers on the Board that it may use prior to the making of a decision on a proposed national road development. In particular, the Board may request further information from any person who made submissions or has information of relevance on the development. Section 38 also gives discretion to the Board to arrange and hold meetings with a road authority after receipt of an application for approval. However, there is no explicit provision enabling a road authority to initiate such meetings. In addition, section 38 gives discretion to the Board to request further information from the road authority in relation to the effects on the environment of the proposed national road development, or on the consequences for proper planning and sustainable development in areas which would be affected by the proposed national road development.

Section 38 also allows the Board, when and where appropriate, to invite the road authority to make alterations to the proposed national road development and provide such information as may be required, including possibly a revised EIS. Where further information provided by the road authority is considered by the Board to contain significant additional data relating to likely effects

on the environment and consequences for proper planning and sustainable development, or where the road authority makes alterations to the proposed road development, the road authority must follow the procedure outlined in subsection 7 on being required by the Board to do so. Subsection 7 provides that in the circumstances indicated the road authority must publish a notice advising of the further information or alterations concerned, indicating where such information or revised EIS may be viewed or purchased and specifying that submissions may be made to the Board. The period for display and receipt of submissions shall not be less than three weeks. The notice, information and/or revised EIS must be sent to the original prescribed bodies and submissions invited. The Board will have regard to all information, submissions, etc., received under subsections (1), (4) or (7) of section 38 in making its decision.

Section 39 of the 2006 Act gives "absolute discretion" to the Board to decide whether or not to hold and oral hearing. In this regard, An Board Pleanála, in its circular letter of the 26th of November, 2007, states:[10]

> *As such mandatory requirements no longer apply the standard local authority public notices or notice to individual landowners in such cases should be amended to simply state that the Board may, at its absolute discretion, hold an oral hearing in relation to the matter.*

Section 144 of the Planning and Development Act, 2000, as amended by the 2006 Act, enables An Bord Pleanála, subject to the approval of the Minister for the Environment, Heritage and Local Government, to determine fees in relation to strategic infrastructure applications and other matters. The Board, in its circular dated the 26th of November, 2007, provided for:

- Application fee of €100,000;
- Observation/submission fee of €50 in respect of any local authority strategic infrastructure development. This fee does not apply to specified prescribed bodies or to landowners and others with a legal interest in land who are objecting to the compulsory acquisition of land.

The Board also recommended in its circular of November, 2007, that public notices of such applications should clearly alert the public that, subject to the exemptions outlined above, a €50 fee must accompany any submissions or observations.

It is recommended that the applicable fee should be established when making applications/submissions to the Board so as to ensure a valid application/submission.

In circumstances where a local authority is lodging a road development approval application and a related application for confirmation of a compulsory purchase order, it should pay the application fee for the development approval application only and apply for a waiver in respect of the fee for the compulsory acquisition case – the Board will subsequently advise on whether the request for a waiver is granted in whole or in part. The Board has further advised in its November 2007 circular:

> *In the case of strategic infrastructure development applications lodged*

[10] *Re: Important Information in Relation to Local Authority Development and Compulsory Purchase Order Applications*

on or after the 10th December, 2007 and for which the application fee applies the Board will offset that fee against the costs recoverable. Accordingly where the costs to be recovered are less than the application fee a refund of the fee equal to the difference between the fee paid and the cost of determining the application shall be made. Where the costs to be recovered are greater than the application fee, then the Board will direct the payment of the difference.

3.2.1.2 Roads Act, 2007

The Roads Act, 2007, was enacted on the 11th of July, 2007. The principal purpose of the Act is to provide the necessary statutory basis to facilitate the implementation of open road tolling (also known as barrier-free tolling) on toll-based road schemes, through the provision of appropriate deterrents for non-payment of tolls. The Act also provides for the provision of service and rest areas on the national network.[11] The Act makes significant alterations with regard to the environmental regulatory regime. For example, the Act now requires a road authority or the Authority to prepare an EIS for the construction of a service area.

3.2.1.3 Road (Schemes) (Forms) Regulations, 2008 (S.I. No. 49 of 2008)

The Road Regulations, 2000 (S.I. No. 453 of 2000) were revoked by the Road (Schemes) (Forms) Regulations, 2008 (S.I. No. 49 of 2008). These latter Regulations, which came into effect on the 7th of March, 2008, set out the prescribed forms for all of the notification procedures specified under section 51(3) of the Roads Act, 1993, as amended.

3.3 SCOPING

3.3.1 Introduction

Scoping identifies the key issues, specific to a particular project or a specific receiving environment, that are likely to be important during EIA and eliminates those that are not. This prior determination of the nature and detail of the information to be contained in an EIS is one of the most important, yet challenging, stages of the process.

The challenge arises from the need to determine the requirements for studies before any detailed work is carried out.

Scoping is the process of identifying the significant issues which should be addressed by a particular Environmental Impact Assessment.

Guidelines on the Information to be Contained in an EIS, EPA, 2002.

The objective of scoping in the context of a roads scheme is illustrated by an extract from an actual scoping report in Box 5.

[11] http://transport.ie/viewitem.asp?id=9569&lang=ENG&loc=387

Box 5 – Objectives of Scoping

The aim of scoping is to identify matters that should be covered in the EIS. The process of scoping involves assessing a project's possible impacts and the alternatives that could be addressed, and deciding which impacts are significant. An initial scoping of possible impacts may identify those impacts thought to be potentially significant, those thought to be not significant and those where significance is unclear. Those considered to be not significant are eliminated; those in the uncertain category are added to the initial category of other potentially significant impacts.

The importance of scoping cannot be over emphasised. It can help to avoid delays caused by requests from An Bord Pleanála for additional information. It also provides an opportunity for the exchange of views at an early stage when there is still flexibility in the design of the road development and to increase confidence in the outcome of the EIA process.
The process of scoping builds on the minimum requirements, already identified, to determine the issues that are relevant to the particular road scheme. All parties must be conscious of the need to keep the EIS comprehensive and at the same time as tightly focused as possible. To achieve this objective, scoping can be carried out by reference to the following criteria:-

- Use *precedence,* avoid 're-inventing the wheel'. Where similar projects in similar locations, e.g., in a specific type of habitat, have previously been the subject of a satisfactory EIS then it is reasonable to use such reference for scoping.

- Use *Likely and Significant* as criteria for determining the range of impacts and thresholds for data assembly respectively.

- Maintain *environmental focus and avoid euphemisms*.

3.3.2 Scoping Process

Scoping builds on the general information requirements set out in legislation and involves the **determination of likely significant impacts** arising as a result of the interaction of a particular project with a particular environment. Typically, this is done through use of **professional judgment** and **consultation** with bodies with expertise in a particular area while also drawing on **existing sources of information**.

3.3.2.1 Determining Significance

The challenge of scoping arises from the need to determine the requirements for specialist studies before any detailed work is carried out. This is principally done through exercising professional judgment, drawing upon the experience of the EIA Team and through consultation with relevant organisations with expertise and responsibilities in a particular area.

The subjectivity involved in determining significant environmental effects means that it is important to establish significance criteria at the outset to inform the scoping process. While it is generally not possible to prescribe a definitive list of significance criteria, the DoEHLG guidance document for consent authorities regarding sub-threshold development (European Commission, 2001) does provide a checklist of criteria for evaluating the significance of impacts which is

useful in assisting the scoping process. This is reproduced in **Appendix 4.**

3.3.2.2 Scoping Through Consultation

Formal Scoping

The 1997 Directive amending the original EIA Directive introduces a provision whereby a competent authority can be requested to provide an opinion as to the information to be contained in an EIS prior to the submission of the EIS. This provision is contained in section 50 (4) of the Roads Act, 1993, and An Bord Pleanála is the competent authority for the purposes of this section. Requests submitted through this mechanism are known as formal scoping requests.

The format of the formal scoping request is not specified in legislation. However, for some road schemes, it has become practice to prepare a scoping report (see section 3.3.3). Where a scoping report is being prepared, a draft of the report can form a useful basis for the formal scoping request to the Board. Using a draft scoping report as the basis for the formal scoping request may add to the scoping process by allowing the Board to give a more informed and detailed scoping opinion.

On receipt of a formal scoping request, An Bord Pleanála consults with the statutory consultees specified in section 51 of the Roads Act. These are set out in Box 6 (see section 6.1.1).

Box 6 - Statutory Consultees for the Purposes of Section 51 of the Roads Act, 1993

- The Minister for the Environment, Heritage and Local Governmemt
- The National Tourism Development Authority - Fáilte Ireland
- An Taisce – the National Trust for Ireland
- An Comhairle Ealaíon
- The Heritage Council
- Any local authority, the functional area of which would be affected by the proposed road development.'
- The Department of the Environment for Northern Ireland'
- Minister for Communications, Energy and Natural Resources'

Note: It is not mandatory to consult with each of these consultees in all cases. See section 6.1.1 for more detailed information.

After consulting with these bodies and the applicant road authority, the Board gives a written opinion on the information to be contained in the EIS. It is important to note that the Board is not bound by this opinion in its later assessment of the EIS, and, therefore, it can request additional information when undertaking that assessment.

Informal Scoping

Scoping can also be carried out by the road authority by consulting directly with relevant bodies. While it is up to the road authority to identify appropriate consultees, the statutory consultees under the Roads Act, listed in Box 6, should be consulted as a minimum as they will be formally asked for their opinion on the EIS later in the process.

However, it should be noted that this list does not reflect the reality of the number of organisations

who may have information and expertise to provide on the potential environmental impacts of a roads scheme. The list of consultees for local authority development requiring EIA contained in the Planning and Development Regulations, 2001, (Article 121 is reproduced in **Appendix 5** for information purposes) while having no statutory application to road schemes, may provide a useful guide to identifying other relevant statutory bodies. The EPAAdvice Notes on Practice in the Preparation of EIS also contain a useful list of consultees. The main statutory consultees of relevance to national roads, but not specified in the Roads Act, are the Regional Fisheries Boards and the National Parks and Wildlife Service (NPWS) and National Monuments Service (NMS) of the Department of the Environment, Heritage and Local Government (Note – the functions of the National Monuments Advisory Council were transferred to the Heritage Council).

Statutory consultation is discussed further in section 6.1.1.

3.3.2.3 Existing Sources of Information

There are a number of sources of existing information which should be referred to in determining the scope of the EIS. For road schemes, considerable environmental information will have been gathered through the route selection and constraints reports. In addition, reference should be made to other EISs carried out in the area, in keeping with the EPA's recommendation to avoid "reinventing the wheel".

A range of published guidance exists at EU and national level: the *EU Guidance Document on Scoping*; the *EPA's Guidelines on the Information to be Contained in EISs*, the EPA's *Advice Notes on Current Practice in Preparing EISs*; the National Roads Authority's National Roads Project Management Guidelines and specialist guidelines (for example on noise and ecology) and the Highways Agency (UK) *Design Manual for Roads and Bridges* (DMRB).

3.3.3 The Scoping Report

While not a statutory requirement, it is normal practice on road schemes for a scoping report to be prepared as an outcome of the scoping process. The aim of such reports is to identify:

- legal requirements
- consultation required
- potential significant impacts
- the contents of the EIS,
- baseline Study Requirements and schedule of surveys, and
- specific assessment required for each impact topic.

The scoping report should indicate the information to be provided in respect of the road scheme so as to satisfy statutory requirements, Section 50 of the Roads Act, 1993, is relevant in this regard. These requirements have been set out in an earlier section of this chapter and a consolidated version of section 50 of the Act is reproduced in **Appendix 2.**

The scoping report should also address the **consultation** requirements of the EIA process. For roads schemes, extensive consultation will already have been carried out during the Constraints

and Route Selection phases. The extent of these consultations should be documented in the scoping report. The scoping report should also identify the consultation that should be carried out for the remainder of the EIA process and how it should be carried out, building on experience and information gathered during the earlier phases of the road scheme development.

While the statutory EIA process provides for a copy of the EIS to be submitted to statutory consultees and for those consultees and the general public to make a submission to An Bord Pleanála, there is no statutory requirement to carry out consultation during the preparation of the EIS. However, the approach to national road project planning, set out in the *National Roads Project Management Guidelines* (National Roads Authority, 2000), emphasises the need for consultation throughout the planning process. This approach should be maintained during the preparation of the EIS, with the scoping report setting out the approach to be taken to consultation. The scoping report should identify relevant organisations to be consulted during the preparation of the EIS. Typically this will include statutory consultees referred to earlier and other consultees identified as being of relevance. Key consultees that should be consulted (where relevant to the anticipated impacts) during the preparation of the EIS include Regional Fisheries Boards and the National Monuments Service and the National Parks and Wildlife Service of the Department of the Environment, Heritage and Local Government. The scoping report should also describe consultation carried out with the public in earlier phases of project planning.

The main function of the scoping report is to identify **potential significant environmental impacts** arising from the project. This is done by reference to the general environmental headings contained in the legislation and through the professional judgment of the EIA team supplemented by consultation with others as described earlier. This will lead to the identification of topics to be addressed by the EIS which will form the basis of the **contents of the EIS.** The scoping report should indicate the outline structure of the EIS. A sample table of contents for a road scheme EIS is contained in **Appendix 6.**

The EIS builds on these general information requirements by identifying and assessing specific environmental impacts and by considering how the project will interact with particular aspects of the environment during each phase of its implementation, i.e. construction and operation. This will be done through **specialist studies** carried out for each of the relevant topics identified earlier. The scoping report should identify areas where specialist studies are required and provide study briefs for each of these topic areas. The outcome of a specialist study may be a detailed and lengthy report. Given the need to keep the EIS focused, limited in size and accessible, a summary of the study that is suitable for reproduction in the EIS should be provided. The EIA Project Manager and the relevant specialist should agree on the content of the summary report before its inclusion in the EIS. Since the specialist report forms part of the EIS, the existence and availability of the report should be referenced in the EIS. This will facilitate those wishing to review a particular environmental component in greater detail to do so (see section 7.5, Referencing of Technical Annexes). The brief should set out a suggested format for reporting the study in the EIS. An example of this is provided in Box 7.

The study briefs provide the framework within which specialist studies are carried out. The preparation of the briefs, therefore, provides a basis to ensure that sufficient information is provided in the EIS while at the same time ensuring that information is focused on effects that are significant and likely.

Box 7 – Sample Format for Reporting of Specialist Studies in the EIS

A draft of the specialist report should be submitted to the EIA Project Manager. Summary report to be included in main body of EIS text with format to be defined by Project Consultants. A guide is given below as to general format with the emphasis placed on the main headings:

1. INTRODUCTION - Overview of the specialist area and aims of study

2. METHODOLOGY - Relevant legislation, site visits, any assumptions made.

3. DESCRIPTION OF EXISTING ENVIRONMENT - existing environmental character of the proposed site and surrounding area, including assessment of context, character, significance and sensitivity. This section will particularly focus on providing a thorough baseline assessment of the existing environment.

4. DESCRIPTION OF LIKELY IMPACTS - Assessment of likely impacts as follows:
   - Assessment of the 'do minimum' impact, an explanation of how current trends would impact on the environment if the scheme is not built
   - Description of impacts from construction and operation of the scheme (do something) including the character (positive/negative), magnitude (shortterm/ long-term) and duration (temporary/permanent or cumulative) of potential impacts and their consequences for the environment
   - Assessment of the worst-case scenario.

5. MITIGATION MEASURES - Description of proposed mitigation measures to avoid, reduce or remedy impacts.

6. RESIDUAL IMPACTS - Description of any expected residual impacts after mitigation.

7. CONSTRUCTION IMPACTS AND MITIGATION MEASURES

8. IMPACT INTERACTIONS AND CUMULATIVE IMPACTS - Description of impact interactions and cumulative impacts.

9. SUMMARY - A summary of key findings.

10. ENVIRONMENTAL COMMITMENTS - A summary of the environmental commitments, i.e. the mitigation measures to be undertaken.

A set of drawings of the proposed scheme **(see section 3.3.5 on the production of drawings for an EIS)** showing the extent of the study area and approximate details of cut and fill depths and of the horizontal and vertical alignments, will be made available to the appointed consultant. In addition, aerial photography of the area will be made available for all potential routes. Further information regarding engineering design is available from www.nra.ie/environment.

Notes:
(a) The study should comply with the requirements of the Roads Act, 1993, and associated Road Regulations and have regard to the EPA Guidelines and advice notes on EIS.
(b) The methodology, criteria, sources and standards used should be specified.
(c) The person responsible for the preparation of the study may be required to give evidence at an oral hearing for the Scheme.

The study brief should also clearly set out the objectives of the specialist study. Box 8 contains a sample study brief relating to the Landscape and Visual Impact section of an EIS.

Box 8 – Sample Brief for Study on Landscape and Visual Impact

A study is required to identify, describe, and assess the impact of the proposed route being considered. The aim of this detailed study will be to identify the impacts of the dual carriageway ancillary link roads and associated works on the visual amenity and landscape of the study area and identify possible ameliorative measures to minimise these impacts. This detailed study will form part of the general Environmental Impact Statement on the proposed route.

The study shall include:

1. A survey, description, classification and assessment of the existing landscape through which the road scheme is proposed to be built. The survey should have due regard for landscape planning and areas of significant ecological, woodland and cultural interest.

2. A description and assessment of the visual effects of the road scheme, both positive and negative, (including road alignment, bridges, embankments and vehicular movement) on:

   (i) the landscape

   (ii) views from adjoining areas (including roads and parks)

   (iii) views from adjoining buildings.

3. Adescription and assessment of the views which will be available to persons travelling along the proposed road scheme and views of the proposed route from the surrounding landscape using such parameters as view distance, view elevation, view angle and scenic quality.

4. Avisual pattern and landscape development plan that can generate a new visual pattern for the route and which takes account of the complex visual environment through which the route passes.

5. Recommendations for specific ameliorative measures to reduce and/or minimise adverse visual effects. These measures should be described in detail and include a description of the type, size and position of features proposed as well as a cost estimate for the provision of such features.

6. An evaluation from the point of view of visual impact of sites which are particularly unsuitable for use as storage areas, machinery depots, temporary access roads or for the disposal of spoil during construction of the road scheme.

Study Format

Paragraphs 1 – 6 may include the provision of physical models, photomontages and other visual aids.

The study findings should include a presentation where possible in tabular form together with appropriate map(s).

In describing the existing environment, the specialist study should provide a description as it relates to the specialist area of study rather than repeating a generalised description of the environment which may have been provided in another part of the EIS.

A focused and concise EIS will facilitate public accessibility and understanding. In keeping with international practice, the EPA Guidelines[12] recommend that the main volume of the EIS should not exceed 100 pages in length. However, as road schemes can extend over an extensive geographical area, road EISs have developed into substantial documents. Nonetheless, practitioners should seek, wherever possible, to minimise the length of the main document. Where the information presented in an EIS on a particular topic is a summary of a more detailed report, it is important that this is made clear within the EIS, with a reference to the more detailed report and an indication of where it can be obtained should a reader wish to investigate a topic in greater depth.

3.3.4 On-going Scoping

The scoping process does not end with the scoping report. It is important for all parties – design team, specialists and roads authority – to be aware of the potential for the scope to be altered during the preparation of the EIS. This can arise either because of design reviews or because new environmental sensitivities come to light during the preparation of specialist studies or through consultation with organisations. Given the implications of changes to the scope of the EIS for the management of a scheme programme, budget and costs, it is important that proposed EIS scope changes are notified to the relevant NRA Engineering Inspector.

3.3.5 Production of drawings for an EIS

It is very important that the drawings in an EIS conform to a set scale and key within each individual EIS. This will assist the reader in identifying with the Scheme throughout each chapter of the EIS.

A set of engineering maps should be provided to illustrate scheme layout with the overall landtake clearly shown. It is suggested that these maps should be at a scale of 1:5000. These maps should follow the drawing key that is being used for the Compulsory Purchase Order (CPO) maps for the scheme, i.e. each CPO/Motorway Scheme Deposit Map should have a corresponding Engineering map in the EIS. This is very helpful as the 1:5000 A3 EIS maps can be printed as A1 maps with a scale of 1:2500 matching the CPO drawings. These engineering maps can then be used to inform the public and others of exactly what each CPO Deposit Map represents in terms of land-take. These Engineering Drawings can be utilised for display purposes at Oral Hearings in both hard copy and digital format.

Most specialist chapters of an EIS will use drawings for information purposes. These drawings are normally contained in a separate volume to the main text of the EIS. It would be beneficial if a set 'key' and 'scale' is applied to all the chapter drawings. For example, the extent of the scheme in Landscape Drawing No.1 shows the same extent as Noise Drawing No.1. This allows co-ordination of mitigation measures and enables the user to cross reference other specialist reports covering the same area in question. This should be addressed and agreed at an early stage so that

[12] EPA Guidelines, Section 2.4.6.

any consultant working on the scheme can start with the agreed format, thereby minimising the workload as well as providing a consistent approach and facilitating the user following publication.

CHAPTER 4

The Proposed Development, Receiving Environment and Impacts

4.0 THE PROPOSED DEVELOPMENT, RECEIVING ENVIRONMENT AND IMPACTS

4.1 Introduction

An Environmental Impact Statement is a statement of the likely significant effects/impacts of a proposed road development on the environment. The purpose of the EIS is to assist the competent authority – An Bord Pleanála – in reaching a decision as to whether a proposed road development should be allowed to proceed.

While this chapter provides practical guidance on the preparation of an EIS, there are several additional sources of information that provide guidance in this area and a number of these are referenced at the end of this document. The purpose of this chapter is to provide guidance on the preparation of an EIS in the context of a proposed road development. Specifically, guidance is provided on the information required to describe the following:

- Consideration of alternatives,
- The proposed road development,
- The receiving environment and environmental effects/impacts,
- Mitigation measures in an EIS are described separately in Chapter 5.

For each of the above sections of the EIS an outline of the legal requirements is provided. The main issues involved in each of these areas are identified and illustrated by examples. Some of the issues identified here will have been raised during the consultation phase for road schemes as well as through legal reviews. The approach set out in this chapter draws on experience gained through this consultation process.

4.2 EIS Descriptions in the context of a Public Private Partnership, Design and Build and Early Contractor Involvement Schemes

4.2.1 Public Private Partnership and Design and Build Schemes

Public Private Partnership (PPP) and Design and Build (D&B) forms of contract has emerged as the main contract formats for national road schemes. The PPP and D&B format transfers greater risk to the contractor by giving the contractor scope to develop the detailed design of the scheme after statutory approvals have been secured. The contractor is encouraged to bring innovative methods and techniques to the design and construction of the scheme, including in the area of environmental impact and mitigation measures within the framework of what is permissible under the statutory approval of the scheme.

This has implications for the way in which road scheme EISs are written. An overly prescriptive style will not facilitate the objective to cater for flexibility and innovation inherent in the D&B format nor the introduction of alternative and innovative construction methods and techniques by the contractor. Overly prescriptive description may also result in situations where the contractor is precluded from introducing innovative designs to reduce environmental impacts.

A road scheme EIS should, where possible, be written with this need for post statutory approval flexibility in mind. One way of doing this is by describing effects/impacts in terms of **maximum effects/impacts not to be exceeded** (or an envelope of effects/impacts) and describing mitigation in terms of a **performance standard** to be achieved rather than prescribing the actual mitigation measure to be used in achieving the standard concerned. The concept of maximum effects/impact also requires that aspects of the proposed scheme are described in terms of **maximum design characteristics**.

A particular aspect of a proposed road development, for example, a bridge, is anticipated to have certain maximum design characteristics i.e. characteristics not to be exceeded – this might include the height of the bridge or the number of bridge spans. When combined with the receiving environment, this can be translated to a maximum level of environmental impact. The environmental impact should be described in the EIS in terms of setting the maximum (or 'not to exceed') acceptable level of environmental impact. In these circumstances, the actual detailed design of the bridge need not be specified, leaving the D&B contractor to develop the detailed bridge design after approval has been obtained while taking into account the acceptable level of environmental impact set out in the approved EIS. This provides An Bord Pleanála, and the public, with the necessary assurance that the decision has been based on a knowledge of the maximum impacts that could arise. This concept is addressed again in the sections on environmental impacts and mitigation measures.

4.2.2 Early Contractor Involvement Schemes

The NRA is also exploring the applicability of the Early Contractor Involvement (ECI) form of contract to the national roads programme, and is piloting its use on a number of schemes, including, the N8 Cashel to Mitchelstown scheme. Under the ECI approach, the road contractor is appointed before the commencement of statutory procedures, typically after the route selection stage. In addition to the traditional construction phases, the contractor is also involved in the planning phases of the project, involving the preparation of statutory documents, including the EIS. The contractor's early involvement in the project, including the preparation of the EIS, provides scope to incorporate into the EIS many of the environmental design and mitigation measures that normally only become apparent during the post statutary approval / construction phase (i.e. the traditional stage for appointment of contractor).

The Authority is reviewing experience on ECI with a view to examining its wider application to the national roads programme.

The following sections set out the information requirements for the main sections of a road scheme EIS.

4.3 The Preamble

Though not a legal requirement, the preamble or introduction provides the background and terms of reference for the EIS, which explains the structure and assumptions that underlie the road scheme EIS. The following topics are often included or referred to:

- Plans, Programmes or Strategic Environmental Assessment (SEA) that precede the project
- The context for the project and any working assumptions used
- The relationships between the topics used in the EIS and those stipulated by the Roads Act, 1993, and revelant Regulations *(e.g. "In this report Fauna and Flora are combined as Ecology")*
- Any scoping or pre-application consultations which may have taken place. This specifies the bodies consulted and the principal concerns arising, and
- The name and qualifications (competency) of the specialists who prepared each section.

Information on the need for the scheme and related policy planning and economic issues is normally contained in the preamble or introduction to the EIS. This information is not directly related to the EIA and so should be kept as brief as possible. According to the EPA Guidelines *"It is important for all parties to maintain a vigilance against the use of EIA to evaluate a wide range of related but not directly environmental topics – no matter how well intentioned or seemingly convenient. Matters such as land use planning, employment, economic, financial, or health considerations are of relevance but only insofar as they are physically manifested at, or directly adjacent to, the site."*.

Alternatives
"…an outline of the main alternatives studied by the road authority concerned and an indication of the main reasons for its choice, taking into account the environmental effects"

The Roads Act, 1993, as amended by the European Communities (EIA) (Amendment) Regulations, 1999 (S.I. No. 93 of 1999)

4.4 Description of Alternatives

4.4.1 Statutory Requirements

The EIA Directive and the Roads Act require that the EIS contains an outline of the main alternatives considered by the road authority and an indication of the main reasons for the chosen option, taking into account the environmental effects.

4.4.2 Alternative Routes

The National Roads Project Management Guidelines require the consideration of alternative routes in the early stages of planning, recognising that the avoidance of impacts through the early consideration of alternatives may be the most important and effective environmental mitigation strategy.

The description of alternatives considered in the EIS is, in effect, a summary of the route selection process. This should include a description of the following main alternatives considered, the criteria used for comparing and choosing between alternatives, and the main reasons for the choice of the preferred route.

In presenting this information, some road scheme EISs use a matrix to demonstrate how each alternative performed against selection criteria. While this will be a simplification of the route

Figure 2: Example of Summary Route Selection Matrix

Summary Matrix

		Route 1	Route 2	Route 3A	Route 3B	Route 3C	Route 3D	Route 3E	Route 4	Route 5	Route 6
Users Of Facilities	Traffic	●	●	●	●	●	●	●	●	●	●
	Pedestrians	●	●	●	●	●	●	●	●	●	●
	Safety	●	●	●	●	●	●	●	●	●	●
Engineering	Impact on Minor Roads	■	■	■	■	■	■	■	■	■	■
	Services	■	■	■	■	■	■	■	■	■	■
	River Crossings	■	■	■	■	■	■	■	■	■	■
	Railway Crossings	Neutral	Neutral	■	■	■	■	■	Neutral	Neutral	Neutral
Environmental	Planning and Development	●	●	●	■	■	●	■	●	●	■
	Geology	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	Ecology	■	■	■	■	■	■	■	■	■	■
	Landscape and Visual	■	■	■	■	■	■	■	■	■	■
	Archaeology & Cultural Heritage	■	■	■	■	■	■	■	Neutral	■	Neutral
	Agriculture	■	■	■	■	■	■	■	■	■	■
	Residential / Private Properties	■	■	■	■	■	■	■	■	■	■
	Community Impact	■	■	Neutral	Neutral	Neutral	Neutral	Neutral	■	■	■
	Air Quality	●	●	●	●	●	●	●	●	●	●
	Noise and Vibration	●	●	●	●	●	●	●	●	●	●
Total Scheme Cost IR£ (M) (1999)		54,288	54,082	53,841	60,869	54,624	54,493	58,993	59,437	57,281	62,052
Ranking		2	1	4	5	4	3	4	4	4	5

Note: All groups cannot be compared in simple relative terms.
This summary is indicative of possible impacts of the scheme.
Each term must be considered on an individual basis.

Key to Impacts

Positive ●	Minor ●	Moderate ●	Major ●	Extreme ●
Negative ■	Minor ■	Moderate ■	Major ■	Severe ■

selection process, it provides a useful aid to the reader of the EIS in understanding how the chosen route was arrived at and the range of environmental factors considered. An example of a route selection matrix is set out in Figure 2.

While the EIA is concerned with environmental factors, it should be pointed out that the route selection process is based on a combination of engineering, traffic and economic, as well as environmental, factors.

4.4.3 Alternative Designs

Alternatives may also be considered in the context of the chosen route in terms of alternative route designs (for example, horizontal and vertical alignments) and alternative processes (for example construction processes).

4.4.4 Hierarchy and Precedence of Decision Making

In considering alternatives, it should be borne in mind that EIA is only concerned with projects. Alternatives will also have been considered at the plan or strategy level. It is not appropriate for a road project EIS to address itself to the consideration of alternatives beyond the level of the project. This issue is addressed further in chapter 7.

4.5 Project Description

4.5.1 Statutory Requirements

An EIS should contain *"a description of the proposed road development comprising information on the site, design and size of the proposed road development"*. [13]

In addition to this information, an EIS should contain a

> *description of the physical characteristics of the whole proposed road development and the land-use requirements during the construction and operational phases to the extent that such information is relevant to a given stage of the consent procedure and to the specific characteristics of the proposed road development or type of proposed road development concerned, and of the environmental features likely to be affected, and the road authority preparing the environmental impact statement may reasonably be required to compile such information having regard, inter alia, to current knowledge and methods of assessment*. [14]

4.5.2 Project Description

The objective of this section is to provide a description of the project in sufficient detail, which if taken together with the description of the existing environment, would allow a reader to understand the significant impacts likely to arise from the proposed development.

Table 2 sets out the typical information required to describe the proposed road scheme adequately.

[13] *Roads Act, 1993, Section 50 (2)*
[14] *Roads Act, 1993, Section 50 (3)*

Table 2: Description of a Road Scheme in an EIS

General Description of the Scheme
- overall length - road type(s) - major interchanges and structures - improvements to associated link roads - map/drawing
Location
- direction (describe the route from where it starts, the general directions it takes, major features passed/crossed and its terminal point - major settlements being bypassed - rivers being crossed
Description of the Preferred Route
- direction - settlements bypassed - interaction with the road network or other proposed schemes - interchanges - structures - toll plazas (where relevant) - cutting/fill - river crossings
Physical Characteristics of the Scheme
- Main line: o Design o General description of the cross section - Ancillary Roads o Description of proposed alterations to ancillary roads - Interchanges o Location and description of interchanges - Toll Plazas o Location and description of toll plazas - Structures o Number of structures o Number of culverts - Bridges/Tunnels over 100m in length o A description should be given of bridges/tunnels over 100m in length as these structures require an EIA in there own right **(see section 2.2)**. - Reference should be made to watercourses being crossed and visual impact issues - Material Requirements and Soil Handling and Disposal o Quantity of material being excavated o Fill requirement (if relevant) o Fill deficit/surplus (if relevant) o Reference to need for borrow pits (if relevant) – the EIS should include a statement here to the effect that borrow pits will be a matter for the contractor who will be required to comply with relevant legislation. o Quantity of material to be disposed of (if relevant) - the EIS should include a statement here to the effect that material disposal will be a matter for the contractor who will be required to comply with relevant legislation. o Management of topsoil - Utilities o Description of utilities affected, both temporary and permanent - Construction Activities o List of pre-construction activities o List of construction activities o Description of major construction activities such as earthworks and structures including duration - Land Use Requirements Construction Phase o List of requirements - Land Use Requirements Operational Phase o List requirements including toll operations where relevant - Geometric Design Measures to Mitigate Significant Adverse Effects o List and brief description of measures

It is important at this stage to consider the issues in relation to D&B schemes described earlier and how these influence the EIS. One of the main elements of a roads scheme that is left to the D&B contractor to design in detail relates to road bridges and structures. Therefore, it is important that these features are described in an EIS in such a way that does not inhibit the further detailed design of the bridge or structure post statutory approval, including the incorporation of environmental mitigation measures. At the same time sufficient information is required to enable the reader to understand what is being proposed and the impacts arising from the interaction of the bridge/structure or other features with the environment. This can be done by describing the bridge or structure in terms of its maximum design characteristics, for example, the maximum height and length of the bridge, or the maximum number of bridge spans. This has implications for the way impacts are described, discussed later in this chapter. The description of the route, its design and major features (crossings, cuttings, junctions etc.) should address all relevant phases of the project from its construction through to its existence and operation. Any bridge or tunnel structure with a span in excess of 100m should be clearly identified in the EIS and any corresponding public notifications associated with the EIS, since structures of this scale require an EIA in their own right.

4.6 Description of the Existing Environment

4.6.1 Statutory Requirements

An EIS should contain *"the data required to identify and assess the main effects which the proposed road development is likely to have on the environment"*.[15]

An EIS should also contain

> *a description of the aspects of the environment likely to be significantly affected by the proposed road development, including in particular:*
>
> - *human beings, fauna and flora*
> - *soil, water, air, climatic factors and the landscape*
> - *material assets, including architectural and archaeological heritage, and cultural heritage*
> - *the inter-relationship between the above factors*
>
> *to the extent that such information is relevant to a given stage of the consent procedure and to the specific characteristics of the proposed road development or type of proposed road development concerned, and of the environmental features likely to be affected, and the road authority preparing the environmental impact statement may reasonably be required to compile such information having regard, inter alia, to current knowledge and methods of assessment*.[16]

4.6.2 Description of the Environment

An accurate description of the existing environment is necessary to predict the likely significant impacts of a proposed road development. It is important that the methodology used in describing the existing or baseline environment is clearly described to facilitate an understanding of the

[15] *Roads Act, 1993, Section 50 (2)*
[16] *Roads Act, 1993, Section 50 (3)*

information and any assumptions made. This also facilitates comparison of information between EISs. Further information on this aspect is contained in the EPA's *Guidelines on Information to be Contained in an EIS*.

The description of any aspect of the environment should provide sufficient data to facilitate the identification and evaluation of the likely significant effects on a particular topic. The EPA Guidelines set out a general methodology for descriptions of the environment – according to the Guidelines, systematic, accurate and comprehensive descriptions include:

- Context
- Character
- Significance
- Sensitivity

Where possible, descriptions of the existing environment should be made by outlining the standard methodologies and practices which were applied in compiling baseline information. Information on these is available in specialist guidance documents for particular environmental topics, some of which are referenced at the end of this document.

Describing the environment by reference to a particular methodology helps to structure and focus this section of the EIS. Information presented on the existing environment in road scheme EISs has tended to be lengthy and overly descriptive, reflecting the relative availability of existing information in this area. It is often the practice to repeat some of these descriptions when describing significant environmental impacts, leading to repetition and lack of focus in the EIS.

An example of environmental description based on the approach set out in the EPA Guidelines is contained in Box 9. This example is taken from the Soils and Geology chapter of a road scheme EIS.

Box 9 - Description of Existing Environment

Soils and Geology

Context
The preferred route is shown in Volume 3 (figures KEK/PR/G-01 - KEK/PR/G-24). It runs south of the main conurbations of Kinnegad, Clonard, Moyvally and Enfield and connects to the existing M4 south of Kilcock. It links to the existing N6 and N4 on the western end. The total length of this route is approximately 36.3km.

Character
The ground would generally be described as a gently undulating glacial topography with the exception of the Cappagh Hill area on the eastern end which rises to about 140m OD. Apart from this hill and its immediate surrounding area, the ground level along the route varies from a low of about 64m OD to about 80m OD.

The general drainage would be poor and the groundwater level would be expected to be close to ground level, particularly in the low lying areas.

Significance
The geotechnical considerations that would be of significance in relation to the Environmental Impact Assessment would include the possible impact of the road subsoil drainage system on the groundwater in the vicinity of the road or possible impacts of ground improvement methods that may be required to enable the road to be constructed over areas of soft ground. Other aspects of significance would include the cost and environmental implications in relation to the amount of soil or rock that has to be disposed off site and the extra amount of soil, over and above that available on site, that has to be brought onto the site to build up embankments. The ground movements outside the road itself that arise from either embankments or cuts can also be of significance.

Sensitivity
The environmental impacts due to geotechnical considerations are not considered to be particularly sensitive to the road design on the ground expected to be encountered along the route, with the possible exception of the impact of the road system drainage on areas of special scientific interest. Lowering the road alignment close to such areas may affect the hydrogeological environment.

4.7 Description of Likely Significant Effects/Impacts

4.7.1 Statutory Requirements

The identification of likely significant environmental impacts is one of the core functions of an EIS. Section 50(2)(c) of the Roads Act, 1993, indicates that an EIS should contain *"the data required to identify and assess the main effects which the proposed road development is likely to have on the environment"*.

Section 50(3) of the 1993 Act sets out information requirements for an EIS that are *"in addition to and by way of explanation or amplification of the specified information referred to in subsection (2)"*.

This includes "*a description of the likely significant effects (including direct, indirect, secondary, cumulative, short, medium and long term, permanent and temporary, positive and negative) of the proposed road development on the environment…"*. In addition to identifying the environmental

topics that should be addressed in an EIS, the Act requires that *"the interrelationship between the above factors"* be addressed.

This additional information is required under section 50(3)

> *to the extent that such information is relevant to a given stage of the consent procedure and to the specific characteristics of the proposed road development or type of proposed road development concerned, and of the environment features likely to be affected, and the road authority preparing the environmental impact statement may reasonably be required to compile such information having regard, inter alia, to current knowledge and methods of assessment.*

The EIS should, under each of the environmental topics, identify and describe the likely significant impacts arising as a result of the interaction of the proposed road development with the existing environment.

4.7.2 Assessment Methodology

It is not the purpose of these guidelines to provide guidance on the assessment methodologies for particular EIS topics. Methodologies for various disciplines are well established and a number of guideline documents exist for these specialist areas. However, it is important that each topic chapter in the EIS clearly sets out the methodology for the assessment so that the basis for identifying and describing significant environmental effects/impacts is well understood. Where the methodology used draws on a particular document or documents, these should be clearly referenced. The example in Box 10 is taken from a road scheme EIS and demonstrates how the methodology for the assessment of a topic, in this case landscape, can be presented in a way that is clear, concise and easily understood.

4.7.3 Impact Description

It is important when describing likely impacts to use language that is consistent and easily understood. The EPA's *Advice Notes on Current Practice in Preparation of EISs* contains a glossary of impacts which is useful when describing impacts (see Box 11). Impacts are described by reference to quality of impact, significance of impact, duration of impact and types of impact.

Box 10 – Sample Assessment Methodology

The landscape and visual impact assessment for the preferred route will assess the detailed impacts of the route on the receiving landscape.

A zone of visual influence will be defined and utilised for the assessment. The various elements of the landscape within this zone will then be assessed for their effects. The proposed scheme will be assessed for its impact on the landscape in terms of impacts to landscape character, and visual impacts. The main references which were utilised in this assessment were:

1. *Landscape and Visual Impact Assessment*, published by the Institute of Environmental Assessment (1996).

2. *Advice notes on Current Practice in the Preparation of Environmental Impact Statements*, published by the EPA (2003).

3. *Design Manual for Roads and Bridges*, Vol. 10 & 11, Environmental assessment, published by HMSO (1993).

The purpose of the assessment of the preliminary routes was to determine the route corridor which presents the least overall landscape and visual impact. A key element of this stage of the assessment was the difference between landscape and visual impacts. These are defined as follows:

Landscape impacts:

Landscape impacts are defined as changes in the fabric, character and quality of the landscape, and:

- Direct impacts upon specific landscape elements
- More subtle effects on the overall pattern of landscape, regional and local distinctiveness.
- Impacts on designated landscapes, amenity and conservation areas.

Visual impacts:

- The direct impact of a particular development on views
- The potential reaction of viewers, their location and number
- The impact on visual amenity

In terms of the initial assessment, the landscape and visual impacts are considered together. The route which was selected represented the optimum fit for the majority of its length, from a landscape perspective. The selection of this route was based on overall landscape impacts, rather than specific landscape effects. The assessment of the preferred route will focus on the specific landscape and visual effects of this route. These effects are measured as follows:

1. The visual effects of the scheme as constructed without any woodland or landscape planting. This includes specific visual effects to dwellings, areas of amenity and important landscape areas.
2. The listing and assessment of all areas of landscape significance and sensitive receptors along the route.
3. An approximation of the visual effects of the scheme five and twenty years following the opening of the scheme. This allows an approximate estimation of the ameliorative quality of the proposed ameliorative works.
4. The interaction of landscape with other parameters, in particular cultural heritage, and flora and fauna. This section will examine areas of historic landscape and landscapes of ecological importance, in terms of the effects which the route will have on the contextual nature of specific areas.

Box 11 – EPA Glossary of Impacts

QUALITY OF IMPACTS

Positive Impact: A change which improves the quality of the environment (for example by increasing species diversity; or improving the reproductive capacity of an ecosystem; or removing nuisances; or improving amenities).

Neutral Impact: A change which does not affect the quality of the environment.

Negative Impact: A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance).

SIGNIFICANCE OF IMPACTS

Imperceptible Impact: An impact capable of measurement but without noticeable consequences.

Slight Impact: An impact which causes noticeable changes in the character of the environment without affecting its sensitivities.

Moderate Impact: An impact that alters the character of the environment that is consistent with existing and emerging trends.

Significant impact: An impact which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.

Profound impact: An impact which obliterates sensitive characteristics.

DURATION OF IMPACTS

Short-term Impact: Impact lasting one to seven years.

Medium-term Impact: Impact lasting seven to fifteen years.

Long-term Impact: Impact lasting fifteen to sixty years.

Permanent Impact: Impact lasting over sixty years.

Temporary Impact: Impact lasting for one year or less.

TYPES OF IMPACT

Cumulative Impact: The addition of many small impacts to create one larger, more significant impact.

'Do-Nothing Impact': The environment as it would be in the future should no development of any kind be carried out.

Indeterminable Impact: When the full consequences of a change in the environment cannot be described.

Irreversible Impact: When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.

Residual Impact: The degree of environmental change that will occur after the proposed mitigation measures have taken effect.

Synergistic Impact: Where the resultant impact is of greater significance than the sum of its constituents.

'Worst Case' Impact: The impacts arising from a development in the case where mitigation measures substantially fail.

Source: EPA Advice Notes on Current Practice in the Preparation of EIS

The examples in Box 12 are taken from an actual road scheme EIS and demonstrate the use of a similar methodology for the description of visual impacts on a road scheme.

Box 12 – Impact Description Methodology Applied to Visual Impact

The Extent of Visual Impact

No Impact	There is no change to views in the visual landscape
Imperceptible Impact	The proposal is adequately screened due to the existing landform, vegetation or constructed features.
Slight Impact	The affected view forms only a small element in the overall visual composition, or changes the view in a marginal manner.
Moderate Impact	The proposal affects an appreciable segment of the overall visual composition, or there is an intrusion in the foreground of a view.
Significant Impact	The proposal affects a significant impact of the overall visual composition, or views are so affected that they form a new element in the physical landscape.
Profound Impact	The view is entirely altered, obscured or affected.

The Quality of the Visual Impact

Neutral Impact	Will neither detract from nor enhance the landscape character
Positive Impact	Will improve or enhance the landscape character or viewing
Negative Impact	Will detract from the quality of the landscape

The Duration of the Visual Impact

Temporary Impacts	lasting one year or less
Short-term Impacts	lasting one to seven years
Medium-term Impacts	lasting seven to twenty years
Long-term Impacts	lasting twenty to fifty years

An example of the application of this methodology to impact description is contained in Box 13.

Box 13 – Description of Impacts

Description of Landscape Impacts

At Ch. 4,450 the route enters a grade separated interchange, and will be in 4m of cut. This interchange will be approximately 2m above existing grade, and will generate **moderate** visual impact in this area. The landscape in this area is relatively open, sloping towards the Kinnegad River.

At Ch. 4,760 (M6 Ch. 6,000) the route enters a large fill area for the tie-in to the M6 route. This fill section extends to 9m and is extensive in nature. The confluence of these two routes will generate large scale earthworks and structures which will generate **significant** visual impact in this area. There is a cluster of approx. 18 dwellings located along the LS8021, to the south of these structures that will be affected. These dwellings will be **significantly** impacted visually by the overbridge structures associated with the route.

4.7.4 Significance

The assessment of significance is based on the characteristics of the impact and the sensitivity of the receptor. The evaluation of the significance of the impact, should, wherever possible, use pre-existing standardised terms. Where these do not exist the scoping of the assessment should include an explicit statement of the criteria that will be used to evaluate the significance of the result and residual impacts.

The formulation of such criteria should be based on the significance criteria set out in the EPA's Guidelines:

- Magnitude and intensity
- Integrity
- Duration
- Probability

The DoEHLG guidance document for consent authorities regarding sub-threshold development includes a checklist of criteria for evaluating the significance of impacts. This has been reproduced in **Appendix 4.**

4.7.5 Scheme Scenarios

In identifying and describing likely environmental effects/impacts arising from a roads scheme, it is necessary to acknowledge that the baseline environment, against which the impact is being measured, is in a dynamic state. In the absence of the proposed scheme going ahead, existing trends in the environment will continue so that the environment in the future will not necessarily be the same as the present environment. This may be as a result of natural processes in the environment or as a result of ongoing human activity. For road schemes, it is likely that traffic flows on an existing section of road and through existing towns will continue to grow leading to increased problems in relation to road accidents, noise and air quality under a **do-nothing scenario.**

Therefore, it is necessary to identify impacts under the scenario of minimal maintenance and improvement to the affected section of road - **'do-minimum' scenario** - and the scenario of the scheme being implemented - **'do-something' scenario**. It is normal practice to identify some impacts under a **worst-case situation,** e.g. predicting air quality impacts using peak hour traffic volumes and worst-case meteorological conditions.

4.7.6 Traffic Related Impacts

For some topics in the EIS, the predicted impact is linked to the predicted future traffic flows for the road scheme. This mainly relates to noise and air quality impacts. Traffic data information should be available from the traffic consultants, normally through a traffic model. Traffic data will be required for the year of opening of the road scheme and for another point in time, normally the design year for the scheme. It is important that the assumptions underlying the traffic model are well understood by the air quality and noise consultants so that any relevant factors can be taken into consideration.

The traffic forecasts should be based on the indices contained in the NRA publication *Future Traffic Forecasts 2002 to 2040*. These indices are based on published statistics for national output, population trends and estimates of future car ownership. They should provide a reasonable basis for estimating future travel on the network as a whole. It is not the intention of the Authority to predict all future trips, which may be generated either locally or regionally. The national road network is designed to accommodate the optimum traffic volume for a predetermined level of service, and to facilitate the movement of goods and services between the major cities and towns. It may not always be appropriate for the local authority to model all future trips, particularly those generated from large retail or commercial developments. In such cases these developments are also subject to environmental impact assessment, and as such should take responsibility for, and should document the impact of the development on peak traffic volumes, noise and air quality issues. In certain cases, such developments may give rise to substantial peak hours traffic loading. Readers are referred to the Authority's *Traffic and Transport Assessment Guidelines* (National Roads Authority, September 2007). Where additional capacity is required, arising out of such development, the local authority should discuss with the NRA the improvements necessary to provide such capacity and the means by which they may be funded.

4.7.7 Complex Impact Types

As indicated at the start of the chapter, the EIA Directive and the Roads Act, 1993, identify a number of impact types that should be considered by a roads scheme EIS, to the extent that they are relevant to the scheme. While the identification and description of direct impacts of the proposed road development on the existing environment can be relatively straight forward, other impacts can be more difficult to identify and describe. These include:

- Cumulative impacts
- Indirect impacts
- Impact interactions/inter-relationships

These impacts are often not directly related to the proposed road development and can have complex characteristics. Given the difficulties involved in identifying and describing these impacts, the European Commission published specific guidance to address this area – *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions, May 1999*.

Cumulative impacts are identified in the European Commission guidance as impacts that result from incremental changes caused by other past, present or **reasonably foreseeable actions** (i.e. increased traffic resulting from the implementation of official policy, e.g. National Spatial Strategy or major developments that are already approved) together with the road project. Cumulative impacts are particularly relevant in the context of a road project being implemented as part of an overall roads programme. This creates the potential for impacts to arise as a result of impacts from one road development cumulating with impacts from existing or proposed road developments. Examples of this include the cumulative impact of two road schemes on the same watercourse.

Indirect impacts are defined as impacts on the environment which are not a direct result of the project, possibly produced some distance away from the project or as a result of a complex

pathway. An example of an indirect impact would be the potential lowering of a water table caused by a road scheme that affects a wetland causing an impact on the ecology of that wetland. Construction of the M7 Kildare Bypass required putting mitigation measures in place to ensure that the temporary lowering of the water table in the area did not impact on Pollardstown Fen, which is located 4km to the north of the Bypass.

The application of the concept of indirect impacts presents practical and legal challenges to a roads scheme EIS. Many indirect impacts are related to the construction processes with little information available during the planning and design stage and during the preparation of the EIS. In addition, the activity leading to the indirect impact can itself be the subject of a separate statutory consent procedure, e.g., the management of surplus materials arising from a road construction site may be regulated through the Waste Management Act and associated Regulations. The EPA Guidelines acknowledge this difficulty –

> *The EIA is limited to the effects of the development project that is the subject of the relevant application for consent. Other effects (direct and indirect) that may be reasonably and specifically anticipated may be described for completeness. However, it should be noted that such other activities may be subject to other separate regulation and conditioning under separate legislation and jurisdiction.*

These difficulties bring into question the extent to which indirect impacts can be addressed in an EIS. Practice has been that EISs have tended to include statements that pass the responsibility for managing the road scheme related activity causing the indirect impact on to the road contractor.

Impacts related to the management of surplus materials generated by a roads scheme illustrate the problem. If a roads scheme generates surplus spoil material, it is the responsibility of the road contractor to arrange for the recovery and/or disposal of that material. As this activity is regulated through the Waste Management Acts, 1996-2008, and as the contractor is required to obtain relevant statutory consents, the impacts of the activity are not normally addressed in an EIS for a roads scheme.

The EIS for the road scheme typically identifies the issue, and in some cases provides information on expected amounts of material and types of material, where known. Typically, the EIS includes a statement to the effect that the management of the material will be the responsibility of the contractor in accordance with all applicable relevant legislation.

For road schemes where significant material surpluses are anticipated, it may be appropriate for the EIS to provide additional information, particularly in relation to potential sites and methods for the management/recovery of the material. It is likely that An Bord Pleanála may require this information in circumstances where the quantities and/or type of material in question could give rise to potential significant environmental effects. The case study in Box 14 illustrates the issues involved. However, there is a need to raise the issue in the EIS, having regard to the requirement of the EIA Directive to address indirect impacts. Where possible, general information on the quantities and nature of material involved should be provided. In addition, any information on how the environmental implications of material management e.g. storage and transport will be minimised through contractual requirements should also be given.

In practice, the management of surplus materials on a road scheme, in terms of the methods of disposal/recovery and the locations, remains a matter for the contractor in accordance with relevant statutory provisions (typically the Waste Management Regulations and Planning Regulations). The extent to which this issue should be addressed in the EIS will also depend on the quantities and/or nature of the material involved. Where quantities and/or nature of material give rise to concerns in relation to potential significant environmental impacts, more specific information should be provided. In these circumstances, the approach to be taken in the EIS should be agreed in advance with the National Roads Authority's Environmental Manager. Readers are referred to the NRA's *Guidelines for the Management of Waste from Road Construction Projects* (National Roads Authority, 2008) for a more detailed description of how waste issues should be addressed within an EIS.

Box 14 - Case Study – Indirect Impacts due to Management of Surplus Material.

Information to be Contained in the EIS

The proposed scheme is anticipated to generate a significant material surplus. The EIS addressed the issue of the management of this material by the following statement – *"the disposal of material excavated from cuttings are up to the discretion of the successful contractor, provided they conform to any relevant statutory requirements"*.

Following submission of the EIS to An Bord Pleanála, the road authority was requested, under Section 51(4) of the Roads Act, 1993, to submit additional information within two months. This included additional information on:

"Clarification is required in respect of the quantities of surplus material that would be generated by the scheme, and the general proposals (including alternatives) for its disposal. This clarification is to include an assessment of potential environmental effects…".

Information was provided to the Board on the estimated quantities and nature of the material. General proposals for the management of the material were made which included use of the material for capping and rehabilitation of two landfill sites; maximising reuse on site by using materials in noise bunds and landscaping; reclamation of low lying development land (some examples of sites were given) and reclamation for the prevention of flooding or for agricultural improvement. It was also indicated that there would be no impact on lands of ecological or scientific interest as a result of the activity.

Most of the material could be used through the capping and rehabilitation of the two landfill sites. This took into account the EPA licence requirements in relation to the required depths of material.

Information on the environmental impacts of managing the material was also provided. This mainly related to the positive impacts of reusing the material for landfill capping and rehabilitation (material for these purposes was required regardless of the proposed scheme as part of a separate EPA licence requirement in respect of the landfill), as well as the negative impacts arising from truck movements to transport the material. It was also indicated that the contract for the scheme would contain specific client requirements related to the movement of plant and materials by the contractor to help minimise the impact of material transport on the community and environment.

NOTE: The volumes of material involved in this case study were very substantial and do not reflect the situation for typical road schemes.

Impact inter-relationships/interactions relate to the reactions between impacts within a project and the inter-relationship between impacts identified under one topic with impacts identified under another topic.

The consideration of impact inter-relationships and interactions provides an opportunity to consider the overall impacts of a scheme which might not be immediately apparent particularly when the EIS is structured around individual topics. These impacts can be addressed in the EIS by including a section at the end of each topic chapter dealing with impact inter-relationships and interactions or by including a separate chapter, normally towards the end of the EIS, dealing with the issue.

Examples of impact inter-relationships in a road scheme context include the visual impact associated with noise barriers; inter-relationships between archaeology/cultural heritage and landscape and visual impact; and community impacts and air quality and noise impacts.

Figure 3 was extracted from a road scheme EIS and shows an example of how impact interactions can be highlighted in an EIS through the use of a matrix.

Figure 3: Sample Impact Inter-relationship Matrix

INTER-RELATIONSHIP MATRIX	SOCIO-ECONOMIC	TRAFFIC	FLORA AND FAUNA	SOILS AND GEOLOGY	WATER	AIR QUALITY	NOISE AND VIBRATION	LANDSCAPE	ARCHITECTURAL CULTURAL AND HERITAGE ASPECTS	ARCHAEOLOGY	AGRICULTURE	BLOODSTOCK	PROPERTY	EXISTING ROAD NETWORK	CONSTRUCTION IMPACTS	ROAD LIGHTING IMPACTS	CLIMATE
SOCIO-ECONOMIC		□			□	□	□	□			□		□	□	□		
TRAFFIC	□					□	□							□	□	□	
FLORA AND FAUNA				□	□			□									
SOILS AND GEOLOGY			□		□						□				□		
WATER	□		□	□											□		
AIR QUALITY	□	□					□								□		
NOISE AND VIBRATION	□	□						□					□				
LANDSCAPE	□		□				□		□				□				
ARCHITECTURAL CULTURAL AND HERITAGE ASPECTS								□									
ARCHAEOLOGY															□		
AGRICULTURE	□			□											□		
BLOODSTOCK																	
PROPERTY	□						□	□							□		
EXISTING ROAD NETWORK	□	□													□		
CONSTRUCTION IMPACTS	□	□		□	□	□				□	□		□	□			
ROAD LIGHTING IMPACTS		□															
CLIMATE																	

4.7.8 Project Co-ordination

The difficulties involved in systematically identifying and describing complex impact types and the lack of guidance as to the extent to which they should be addressed by the EIS have meant that such issues have often been at the centre of the consultation process during the preparation

of a road scheme EIS or the subject of legal challenges. Some of the legal issues surrounding these impacts are discussed later. Central to addressing these issues in the EIS is the need to ensure effective coordination of specialist studies, (e.g. meetings with Road Design Team) coordination with project teams for other road schemes being planned or under construction in the area and consultation with relevant agencies. It is essential that details in relation to coordination activities are clearly identified in the EIS.

CHAPTER 5

Description of Mitigation Measures

5.0 DESCRIPTION OF MITIGATION MEASURES

5.1 Statutory Requirements

Having described the proposed road development, the receiving environment and the likely significant environmental effects/impacts, the other major part of the EIA process is to identify measures to mitigate these impacts. The Roads Act, 1993, requires that the EIS contains *"a description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects"*.[17]

5.2 General Approaches to Mitigation

According to the EPA Guidelines, the central purpose of Environmental Impact Assessment is to identify potentially significant adverse effects/impacts at the pre-consent stage and to propose measures to mitigate or ameliorate such impacts. There are three established strategies for impact mitigation – avoidance, reduction and remedy (see Figure 4).

Avoidance is the most effective way of mitigating environmental impacts and this is primarily achieved through the consideration of alternative routes and designs. Environmental considerations are taken into account in the route selection process at which stage it should be possible (but not in all circumstances) to avoid impacts on important environmental features such as designated sites. Avoidance is also relevant as an approach to mitigation in the context of the preferred route where alternative designs, for example, junction layout and design, can be used to avoid impacts. Box 15 illustrates an example of mitigation by avoidance taken from a road EIS.

Once the preferred route has been chosen, mitigation of environmental effects is mainly achieved by **reduction** measures. Reduction involves putting in place measures to reduce the effect of the impact on the receiving environment. Examples include noise barriers that prevent part of the noise emissions from reaching the receiving environment – nearby houses, schools and other sensitive receptors. Reduction is also relevant in mitigating impacts arising from construction, where noise, dust emissions and other potential impacts can be reduced through the adoption of good working practices. An example of mitigation by reduction is given in Box 16.

Box 15 - Example of Mitigation by Avoidance

By avoiding unnecessary impact the need for mitigation measures is greatly reduced. In formulating the proposed route, consideration was given to the importance of significant wildlife habitats, in particular the Royal Canal pNHA (including its associated wetlands) and Ballina Bog pNHA. The importance of avoiding both of these important landscape features has exerted powerful constraints on the design options available since at one point the canal and the northern tip of Ballina Bog are less than 1km apart. In general the preferred route keeps to higher and drier ground and therefore avoids the canal, its associated wetlands and most of the marsh and bogland habitats that were identified in the initial survey. These sites are in the main not of the same conservation value or significance as the NHA sites but are nonetheless of some merit and several contain species that are nationally rare (e.g. the small marsh at Martinstown, an important site for the rare wetland species Marsh Stitchwort, *Stellaria palustris*).

[17] *Roads Act, 1993, Section 50 (2)*

Box 16 – Example of Mitigation by Reduction

As stated in the Impacts section the main consequence of the proposed route would be additional volumes of storm water drainage. The outfall for each storm water discharge pipe would be specifically designed to ensure that scouring of either the bottom or the banks of the receiving watercourse would be minimal.

The proposed drainage systems would ensure that the release of particulate matter (mainly grit, dust and grass clippings where grass is planted) to watercourses would be minimal and consequently there would be no significant adverse impact on surface and groundwater chemical quality. This is particularly important in the case of drainage from the route surfaces following a dry spell. As noted above the levels of particulate matter in the run-off are likely to be elevated at such times compared to the normal Irish weather. Consequently a drainage system incorporating a means of reducing the level of particulate matter discharge is essential.

Where significant adverse effects on the environment are unavoidable, it may be possible to limit the extent of the effect by undertaking **remedial** works. Landscaping of a road is an effective way of mitigating the visual impacts of the road through remedial measures. The positive impact of a new road scheme in mitigating adverse local environmental conditions should also be emphasised in the EIS. Box 17 presents the findings of research carried out by the Authority into the effects of a new bypass on the local air quality and noise environment in the bypassed town.

Box 17 - Case Study – Local Environmental Improvements as a Result of New Bypass

The N7 Nenagh Bypass opened in July 2000, removing thousands of vehicles from the town centre. In order to gain an understanding of the impact of the Bypass on the local environment of the town, the Authority commissioned a study of the ambient air quality and noise levels that existed in the town pre and post opening of the Bypass.

The air quality study was based on a 10 week monitoring programme of those pollutants produced predominantly by vehicular traffic, i.e. nitrogen oxides (NOx), fine particulates and non-methane volatile organic compounds (NMVOC). The study concluded that there was a definite improvement in ambient air quality in Nenagh resulting from the opening of the Bypass.

While the monitoring recorded no significant difference in the hourly nitrogen dioxide (NO2) concentrations pre and post opening of the Bypass, the hourly mean concentration of nitric oxide (NO) for the pre opening period was approximately 35% greater than the post opening mean concentration. This is all the more significant given that 95% of total NOx emitted directly from traffic comprises NO.

In relation to NMVOC, a 38% reduction was observed in both the mean hourly and daily concentrations in the monitoring period post opening of the Bypass. Concentrations of fine particulate matter did not follow the trend in NO and NMVOC. The study suggests that concentrations of this pollutant may be significantly influenced by dust from a local commercial source deposited on the road surface.

The noise study carried out measurements at five locations in the town in June and October, 2000. A comparison of noise levels in the period pre and post opening of the Bypass showed reductions of between 1 and 4dB(A) at four of the locations and an increase of 1dB(A) at the fifth location. It should be noted that a 3dB(A) change in noise level typically equates to a doubling or halving in traffic levels. The most significant improvements in noise levels are between the hours of 4am and 7am on weekdays. This is due to heavy commercial vehicles on early morning distribution runs between Limerick and Dublin using the Bypass.

Compensation as a mitigation measure is not as common as the other three measures mentioned above, but is relevant to road schemes in certain circumstances. Compensation may, for example, be considered where the road scheme impacts on an important environmental feature and where it is not possible to sufficiently mitigate the effect through the measures already discussed. In such circumstances, a comparable environmental feature may be created elsewhere or restored. The most common examples of compensation on road schemes relate to the creation or restoration of wetland habitat to compensate for the loss of, or damage to, an existing wetland. A wetland habitat was created as part of the N11 Glen of the Downs scheme to compensate for the loss of an existing habitat in the area. Other examples include a more sustainable approach to landscaping, where the ecological value of the road is enhanced by promoting increased biodiversity and landscape connectivity. Box 18 presents a case study relating to the creation and rehabilitation of habitat for protected bat species.

Box 18 - Case Study – N18 Ennis Bypass
Mitigation by Creation of Replacement Habitat and Mitigation Measures for the Lesser Horseshoe Bat

The Lesser Horseshoe Bat is a protected species under the Habitats Directive and implementing legislation in Ireland (European Communities (Natural Habitat) Regulations, S.I. 94/1997). The EIA for the Ennis Bypass identified impacts on the lesser horseshoe bat as a potential likely significant impact of the scheme and recommended that appropriate mitigation measures be implemented in agreement with the National Parks and Wildlife Service (NPWS).

The mitigation strategy for the Lesser Horseshoe Bat involves a number of measures aimed at the provision of new habitat, restoration of previous or existing habitat and measures to establish a bat commuting corridor.

As part of the construction of the scheme, farm buildings known to house the Lesser Horseshoe Bat were to be demolished. The mitigation strategy requires the contractor to provide an alternative bat house in the area. The design of the bat house is being carried out by a firm of UK architects and will be in place before the demolition of the farm building. In addition, a bat roost identified through earlier surveys, but subsequently destroyed, is being restored as a suitable bat roost as part of the mitigation strategy.

Mitigation measures are also being put in place to establish a commuting corridor along certain sections of the scheme. The corridor consists of post and rail fencing with a native shrub hedge planted inside the fence line. In addition, where tree roosts or building roosts have to be removed to construct the road, bat boxes are being provided to compensate for the loss.

It will not always be possible or practical to mitigate all impacts. Where this is the case, then the **residual impacts** should clearly be described in accordance with the system for impact description set out in the EPA Guidelines.

In some situations, it may not be possible or practical to fully assess a potential environmental impact during the EIS stage. This can be due to difficulties in gathering information on an aspect of the environment either because of the extent of the area involved, the seasonal nature of the environmental features or the transitory nature of the species involved. The latter case is particularly relevant for species such as bats where there may be uncertainty over their presence in the area affected by the proposed road scheme. In these circumstances, mitigation will take the form of following appropriate procedures and maintaining consultations with the appropriate agency prior

to and during construction. Details of such mitigation strategies should be clearly specified in the EIS. An example of the approach taken in a road scheme EIS is contained in Box 19.

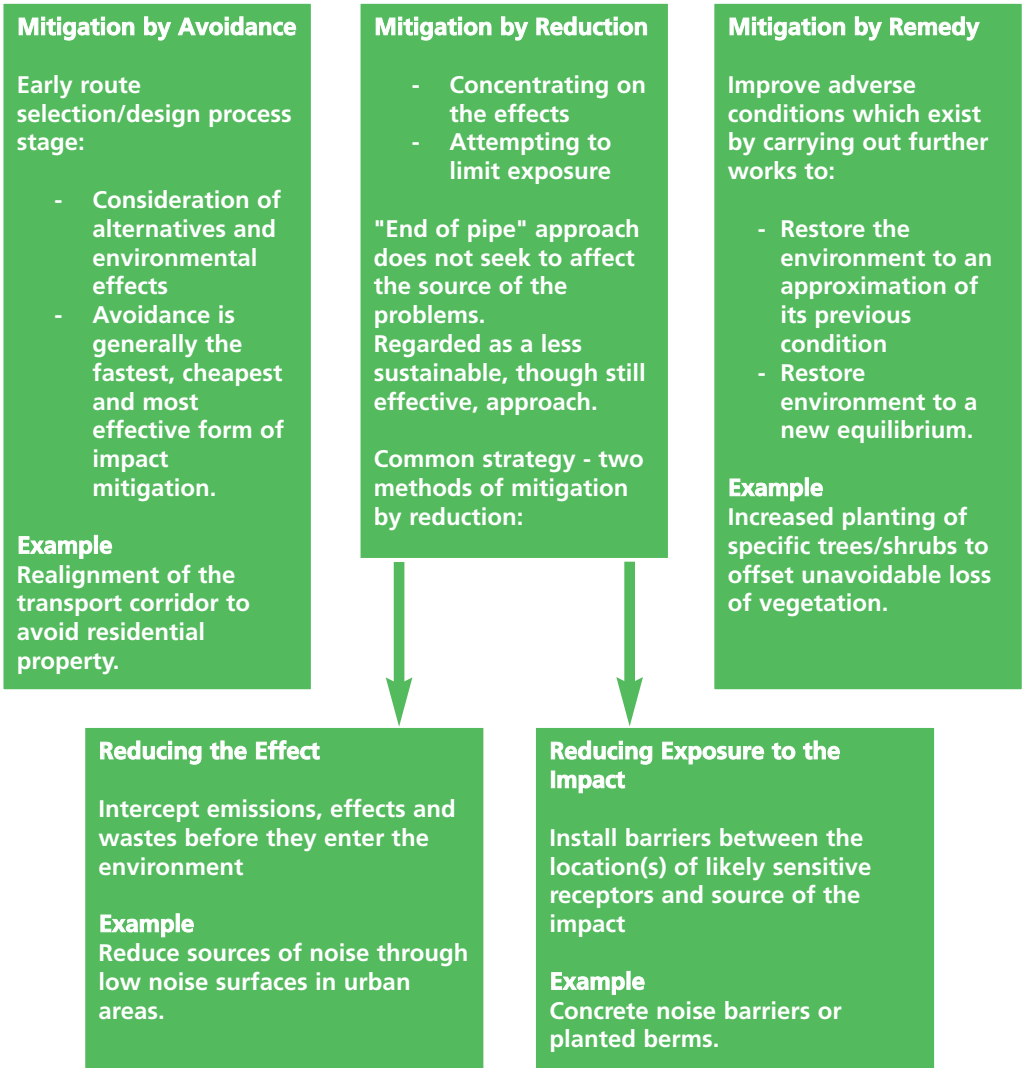
Box 19 – Sample Mitigation Measure Where Impacts are Uncertain

Bats

Where bats are confirmed to be using a structure listed for demolition, they must be excluded prior to demolition. Exclusion can only take place with a licence from the National Parks and Wildlife Service (NPWS) as indicated in the European Communities (Natural Habitats) Regulations, 1997, Part III, Regulation 25 'Derogations'. The procedure for the exclusion of bats will be detailed in the licence document. If bat exclusions are required, they will be undertaken in the presence of a suitably qualified ecologist. They will not be carried out during the breeding season, between the months of June to August inclusive, or during hibernation in the months of November to March inclusive. Where the removal of trees found to be suitable as bat roosts cannot be avoided, appropriate mitigation will be agreed with the NPWS and put in place one month in advance of any felling or disturbance.

The particular challenges in managing the impacts of a road scheme on bat species has led the National Roads Authority to develop specific guidance on the matter.

Figure 4: Mitigation of Impacts



5.3 Mitigation in a Public Private Partnership and Design and Build Context

As with descriptions of the scheme and descriptions of impacts, it is important to describe mitigation measures in a way that does not overly constrain the PPP and D&B contractor in the methods to be employed in achieving the desired level of mitigation. To achieve this, mitigation can be described in terms of a **performance standard** rather than the actual methods to be employed. The benefit of this is that while the exact mitigation measures are not specified, their intended effects in reducing the environmental impacts of the road scheme should be indicated in unambiguous terms.

Noise provides a good example of how mitigation can be described in terms of a performance standard. A design goal for noise has been established for new national road schemes in the *National Roads Authority's Guidelines for the Treatment of Noise and Vibration in National Road Schemes*. This noise level sets the performance standard that mitigation measures should ideally aim to achieve. A range of mitigation measures exists to reduce noise to this target level in circumstances where the noise level is anticipated to be exceeded.

The example in Box 20 is taken from an actual road scheme EIS.

Box 20 – Non-prescriptive Description of Mitigation Measures

It is proposed that surfacing should be provided running along the full length of the main line within the limits of the proposed scheme. In addition to the surface treatment it is proposed that additional mitigation be provided in the form of noise barriers which would further reduce the traffic noise levels in these areas. These barriers may be constructed as noise barrier fences, concrete barriers or earth bunds and would be generally 2m in height.

The exact specification of barrier type for the proposed road will depend on the accommodation works, but as a general rule, timber or concrete noise barriers require less land than earth bunds.

It is important to note that environmental mitigation measures should be determined on a scheme by scheme basis. Nothing in the above example should be interpreted as a stated NRA preference for one type of mitigation measure over another.

It is important that some indication is given of the type of mitigation measures that may be used to achieve the target noise level as mitigation measures may themselves generate impacts. For example, noise barriers can have significant visual impacts.

While describing mitigation in terms of a performance standard works well for disciplines where the environment and impact can be described in quantitative terms, for example, noise and air quality, its application to qualitative disciplines presents greater difficulties. In addition, for some features of a road scheme, mitigation is inherent in the feature through good quality design, for example, the design of a bridge to minimise visual impact.

5.4. Schedule of Environmental Commitments

It is important that the EIS describes the mitigation measures that will be implemented in clear and unambiguous language (notwithstanding that in some instances a performance standard will be specified with mitigation measures to achieve that standard loosely described). Where an EIS is structured on the basis of a separate chapter for individual topics, it may be difficult to gain an overall impression of the full range of environmental mitigation measures to be implemented. In these circumstances, it is useful to extract all the mitigation measures from each topic chapter and combine them in a chapter on mitigation.

In road scheme EISs, this has taken the form of a schedule of environmental commitments to be undertaken by the contractor and specified in the contract documents/client specification. This format has the advantage of providing a clear indication to An Bord Pleanála and other relevant agencies of the mitigation measures to be implemented on the scheme. It also facilitates the incorporation of these commitments into employer requirements for the road contract and subsequent checks to ensure their implementation.

While the actual mitigation measures specified will depend on the circumstances of individual schemes, it is useful to group mitigation measures and commitments as follows:

- Preliminary Design
- Construction
- Operation

Mitigation during the **Preliminary Design** stage relates to design measures taken to avoid or reduce environmental impact and can include, for example, bridge designs that minimise impact on sensitive areas and junction layouts designed to minimise landtake.

Mitigation of **Construction** impacts is a mix of physical and procedural measures. Physical measures could include site hoarding and compound location to minimise visual impact and disturbance. Procedural measures could include construction programme and working times, measures to regulate construction traffic and maintain the flow of public traffic and staff training to prevent and deal with hazardous materials or spillages.

Mitigation during the **Operation** stage of the road relates to mitigating the impacts due to the physical presence of the road and its associated features and mitigating impacts due to traffic using the road. Typical measures to mitigate the impacts arising because of the physical presence of the road can include the provision of fauna passages and the design of lighting to minimise impact on communities. Measures associated with mitigating the impacts of traffic include noise barriers, low noise road surfacing and interceptor systems for run-off from the road.

During the EIA process, the EIA team should be aware of the potential for impacts to **interact** with each other, including the potential for one impact to provide a source of mitigation for another. An example of this could entail the use of surplus material in landscaping the scheme or for the provision of noise mitigation. This has the added benefit of reducing costs and environmental impacts associated with transporting such material off-site.

The schedule of environmental commitments provides a clear basis for the road authority to present its environmental commitments to An Bord Pleanála, other relevant agencies and the public. It also facilitates the transfer of environmental commitments into the contract documents for the scheme. However, during the oral hearing, additional environmental commitments may be given by the road authority after consulation with the NRA. [It is important that the Road Authority ensures that these additional commitments are incorporated into the final list of environmental commitments presented to all inspectors conducting the inquiry.]

Box 21 shows an example of a section of a schedule of environmental commitments dealing with measures to mitigate impacts on the water environment.

5.5 Environmental Operating Plan

While not a legal requirement the NRA is proposing that Contractors on all road schemes adopt an Environmental Operating Plan (EOP). The EOP shall set out the contractors approach to managing environmental issues associated with the construction of the scheme and provides a documented account to the implementation of the environmental commitments set out in the EIS. Readers are directed to the Authority's *Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan* (National Roads Authority, 2007) for more information on EOPs.

Box 21 – Example of Schedule of Environmental Commitments

Introduction
The following is a list of environmental commitments, which will be undertaken by the contractor and will be specified in the contract documents/client specification. The more specialist operations outlined will be undertaken by the client in advance of the works.

Water
To minimise the impact on surface water and groundwater quality the following mitigation will be adopted.

- All drains will be constructed to highest specification as outlined in the Employers Requirements
- Oil Interceptors will be constructed at each outfall
- Grit traps will be incorporated as part of the drainage system
- Closed drains to be used in areas where aquifer vulnerability is classed as high
- Planting on the verges to reduce soil erosion and suspended matter being carried in the run-off
- An emergency plan to deal with accidental spillages will be drafted.

The successful Contractor will have the flexibility to vary vertical alignment and consequently the outfall locations may change.

In the event that an outfall location is changed the Concessionaire (Contractor) will assess the capacity of the natural drainage network. Measures to mitigate against flooding (holding ponds) should be adopted where necessary.

Well supplies in the vicinity of cuts may be adversely affected.

- A water level monitoring programme will be undertaken in the vicinity of cuts whose base is below the natural water table. This will be carried out on a three weekly basis prior to, during and for one year after construction.
- Wells that are proven to have been affected to the extent that they can no longer provide a water supply to the owners will be replaced or deepened or the owners will be connected to a mains water supply where possible.

Mitigation against flooding due to increased peak run-off from motorway.

- The existing drainage systems at outfalls 1a, 10 and 11 may not be able to deal with peak flows and will have holding ponds constructed in accordance with Employers Specifications.
- Culverts must be designed to accommodate the 100 year flows. The design specifications will be set out in the Employers Requirements.

Protection of Wetlands.

- The road design will ensure that where practicable the base of the road and its drainage in the vicinity of wetlands will be at a level greater than the water level in the wetland area.

CHAPTER 6

Environmental Impact Statement Consultation and Notification

6.0 ENVIRONMENTAL IMPACT STATEMENT CONSULTATION AND NOTIFICATION

6.1 Legal Context

6.1.1 Notifications

An application for approval of an Environmental Impact Statement is made to An Bord Pleanála (the Board replaced the Minister for the Environment under section 215 of the Planning and Development Act, 2000) under section 51 of the Roads Act, 1993. It should be noted that the Planning and Development (Strategic Infrastructure) Act, 2006, and the Roads Act, 2007, have made significant amendments to the application procedure and associated procedures in relation to public displays and the making of submissions. Where an application has been made, the road authority must publish a notice in one or more newspapers circulating in the area, indicating that an application has been made and that an EIS has been prepared. The notice must indicate the arrangements, i.e. location, timescales, etc., for the inspection of the EIS, which must provide for a minimum period of 6 weeks, and must outline the arrangements for the purchase of the EIS. Readers are referred to the Road (Schemes) (Forms) Regulations, 2008 (S.I. No. 49 of 2008), which prescribe the forms to be used for such notices. It is advisable that professional legal advice always be sought in relation to preparing and serving/publishing such statutory notices where doubts or issues arise.

The statutory consultees specified in the Roads Act and corresponding Regulations are outlined in Box 6 of section 3.3.2.2. The bodies that must be currently provided with a copy of the EIS are as follows:

- **The Minister for the Environment, Heritage and Local Government**

- **The National Tourism Development Authority - Fáilte Ireland** which replaced An Bord Fáilte Éireann under section 38 of the National Tourism Development Authority Act, 2003.

- **An Taisce – The National Trust for Ireland**

- **An Chomhairle Ealaíon** and the **Heritage Council** (which replaced the National Monuments Advisory Council under section 6 of the Heritage Act, 1995), where it appears to the road authority that the proposed road development would affect any cave, site, feature or other object of archaeological, geological or historical interest or any building of artistic, architectural or historical interest. Although the functions of the National Monuments Advisory Council were transferred to the Heritage Council, the main statutory functions in relation to the protection of archaeological sites and features now rests with the Department of the Environment, Heritage and Local Government, specifically, the National Monuments Section (NMS) of that Department. The Heritage Council, Chomhairle Ealaíon and the NMS of the Department of the Environment, Heritage and Local Government (DoEHLG) should be sent copies of the EIS.

- **Any local authority,** the functional area of which would be affected by the proposed road development (this includes: a Borough Council; a County Council; a City Council, and a Town Council.)

- **The Department of the Environment for Northern Ireland,** A copy of the EIS should be sent to the prescribed authority in Northern Ireland (Article 9(2) of the Roads Regulations, 1994 (S.I. No. 119 of 1994) states that the Department of the Environment for Northern Ireland is the prescribed authority for the purposes of section 51(3)(c) of the Roads Act, 1993, as amended) where the proposed road development is likely to have significant effects on the environment in Northern Ireland or where the prescribed body so requests.

In the case of a local authority acting as a roads authority (as distinct from the NRA) under section 227 of the Planning and Development Act, 2000, as amended, the **Minister for Communications, Energy and Natural Resources** must be sent a copy of the EIS if any part of a proposed scheme is impacting on the foreshore.

While the Minister for Environment, Heritage & Local Government is a statutory consultee, a copy of the EIS should also be sent to the NPWS, which manages the Irish State's nature conservation responsibilities under national and European law, so as to facilitate consideration of the EIS and, as appropriate, the making of submissions to An Bord Pleanála.

Box 22 – Submission of EISs to the Department of the Environment, Heritage and Local Government

It should be noted that the DoEHLG set up the Development Applications Unit (DAU) to coordinate the heritage and nature conservation related responses to EISs. The DAU undertakes this function on behalf of the NMS, Architectural Heritage Advisory Unit and the NPWS and therefore, it provides a single response to any EIS received covering any concerns from an archaeological, architectural heritage or nature conservation perspective. In order to execute this function, the DAU requires three hard copies of an EIS, which should be forwarded directly to the Unit (Development Applications Unit, Department of the Environment, Heritage and Local Government, Dún Scéine, Harcourt Lane, Dublin 2.). The DAU has developed an electronic tracking system known as the Development Application Tracking System (DATS) which facilitates the electronic delivery of EISs.

The 1993 Roads Act does not identify a statutory body with responsibility for fisheries protection as a statutory consultee in relation to EISs concerning national road schemes. However, given the potential for road schemes to impact on fisheries, copies of the EIS should also be sent to the relevant Regional Fisheries Board. **Appendix 5** provides a useful guide, based on the statutory consultation provisions contained in the Planning and Development Regulations, 2001, (which do not have legal application to roads) as to when the Regional Fisheries Boards should be consulted.

When sending a copy of the EIS (see section 6.3.3. for a discussion on what constitutes the EIS) to the specified statutory consultees, the road authority must indicate that an application to approve the road scheme and EIS has been made to An Bord Pleanála and stating that submissions may be made to the Board in relation to the EIS before the specified date.

Following the 1997 amendment to the EIA Directive, an additional provision was added to section 51 (3) of the Roads Act, 1993 dealing with transboundary impact issues. The new section 51 (3)(d) indicates that the road authority shall

where the environmental impact statement and a notice has been sent to the prescribed authority in Northern Ireland pursuant to paragraph (c), enter into consultations with that authority regarding the potential effects on the environment of the proposed road development and the measures envisaged to reduce or eliminate such effects.

Prescribed forms are set out in the Roads (Schemes) (Forms) Regulations, 2008 (S.I. No. 49 of 2008), for all of the notification procedures specified under section 51 (3) of the Roads Act, 1993.

6.1.2 Requests for Additional Information

Having received the application, the Board may request specified additional environmental information from the road authority in accordance with section 51(4) of the 1993 Act. An example of this was provided in Chapter 4.

6.1.3 Approval

Typically, there are two components to the approval of a road scheme – approval of the Motorway Scheme or Compulsory Purchase Order and, where applicable, approval of the EIS.

The Board may approve the proposed road development, approve with modifications, or refuseto approve. In making its decision, the Board takes into account the EIS, any additional information received, any submissions received, and the report of the inspector who conducted the oral hearing (where the oral hearing heard evidence in relation to the likely effects on the environment of the proposed road development).

6.2 Review of the EIS

While not a legal requirement, it is a procedural requirement of the NRA's National Roads Project Management Guidelines that the EIS and also the associated CPO or Motorway Scheme is only published following receipt of approval to do so from the NRA Inspectorate. Review of the EIS prior to its finalisation and publication is a well established practice. It provides an opportunity to identify any issues that might warrant attention or more detailed treatment.

In practice, national road scheme EISs are reviewed on an ongoing basis by the Project Team in the Regional Design Office and, in particular, by the Design Office Project Engineer for the scheme. It is the responsibility of the Design Office Project Engineer to produce the final draft of the EIS for submission to the NRA Inspectorate for review and approval to publish, thereby initiating the statutory approval process for the road scheme proposal.

The EU has provided guidance on the review of EISs (European Commission, 2001), which may assist in the review process.

6.3 EIS Accessibility

Accessibility by members of the public to the EIS is a key requirement of the EIA Directive and an important part of the EIA process. Accessibility concerns both provisions for physical access

to the EIS and the manner in which it is written and presented. The latter should facilitate the understanding of the technical content of the document.

6.3.1 Non-Technical Summary

The production of a non-technical summary of the EIS is a legal requirement of the EIA Directive and the Roads Act. This should be produced as a separate document, using nontechnical language but containing sufficient information to enable the reader to gain an appreciation of the project, the main significant impacts, if any, on the environment and the impact mitigation measures proposed.

6.3.2 Access to the EIS

Recent road scheme EISs have become increasingly large and complex, often running to several hundred pages or more, in addition to technical annexes. While this can, in part, be attributed to the increasing scale and complexity of road schemes, often the inability to scope out minor impacts during the scoping process has also been a contributory factor. In particular, road scheme EISs have tended to provide very lengthy and descriptive information on the receiving environment, primarily because of the relative availability of this information. Scoping has a crucial role to play in minimising the length of EISs through ensuring a proper focus on the likely significant environmental effects and mitigation measures.

The size of EISs has implications for the cost of reproduction of the document as well as implications for the accessibility to and understanding of the document by members of the public. The *EPA Guidelines on Information to be Contained in an EIS* recommend that EISs should not exceed 100 pages in length. While this may not always be realistic for large road schemes, every effort should be made to minimise the length of the EIS. The scoping of EISs, discussed earlier, will play an important role in achieving this.

In an effort to improve EIS accessibility and simplify dissemination of the document, most road authorities now make the EIS available through electronic media, such as the internet and CD.

6.3.3 What Constitutes the EIS?

An EIS is a collection of specialist inputs integrated into a single document to provide an overall picture of the likely significant effects/impacts of the proposed road development on the environment. In many cases, the information presented in a section of the EIS will be a distillation of a more comprehensive technical report. This raises the issue as to whether the supporting documents should be considered to be part of the EIS, with implications for what documents are circulated to statutory consultees and made available for public consultation.

Where the information presented in the EIS is a distillation of more comprehensive specialist reports, these reports should be regarded as forming part of the EIS and they should accordingly be clearly referenced in the EIS. Therefore, the EIS and its supporting specialist reports shouldbe copied to statutory consultees as outlined in section 6.1.1.

Supporting reports should also be made available for public inspection and purchase (these reports are normally available for purchase at production cost) and statements to this effect should be included in the EIS and any other notification or publicity material associated with the publication of the EIS. This is critical in ensuring that all information relevant to the preparation of the EIS is identified and made available to the competent authority, interested organisations and members of the public.

6.3.4 Integrate the Contributions

Integrating the specialist contributions into a single comprehensible document is an important task for the EIA project manager. The project manager should be able to identify inconsistencies in the EIS and areas where environmental impacts interact with each other, which may not have been identified or adequately dealt with in the specialist reports. Where impact interactions are an important consideration, it is useful to identify these through a separate chapter in the EIS.

The project manager should also ensure that the EIS is easy to read and is well presented. Consistency in styles of description, for example by referring to the EPA Glossary of Impacts, and removal of repetition between topic chapters will add to the quality of the overallpresentation of the EIS. The NRRDO/local authority Project Engineer should be satisfied that this work has been completed by the EIA Project Manager prior to the submission of the final draft of the EIS to the NRA for review and approval to publish the EIS.

CHAPTER 7

Key environmental policy issues for consideration in a road scheme EIS

7.0 KEY ENVIRONMENTAL POLICY ISSUES FOR CONSIDERATION IN A ROAD SCHEME EIS

7.1 Introduction

Under the Roads Act, 1993, it is the general duty of the NRA to '*secure the provision of a safe and efficient network of national roads*.' The NRA operates within the framework of Government policy for the development of national roads, e.g. the National Development Plan, 2007-2013. The NRA also operates within the framework of Transport 21, which is the capital investment framework under the National Development Plan through which the transport system in Ireland will be developed, over the period 2006-2015.

The high profile and often contentious nature of national road schemes has meant that a number of challenges have been brought against national road scheme proposals and their associated EISs. These challenges have been taken through the Irish court system, or as complaints to the European Commission.

The information contained in the EIS as specified in the Roads Act, 1993, is specific to project level requirements. However, road scheme EISs are periodically challenged on issues related to broader environmental and transport policy. The EPA *Guidelines on the Information to be Contained in Environmental Impact Statements* identify a number of such policy issues that have been at the centre of controversies and challenges to the Environmental Impact Assessment process.

In practice environmental and transport policy issues are often raised at oral hearings on the basis that the project level EIS has failed to adequately address these national and international policy issues. The following section sets how project level road scheme EISs interact with such policy issues. It is anticipated that this will provide practical guidance to those involved in the preparation of road scheme EISs and related oral hearings in addressing such issues.

7.2 Consideration of Alternatives

The consideration of alternatives is a recurring theme in challenges to road schemes. Alternatives can be considered both in terms of the hierarchy of strategies, plans and programmes and in terms of alternative route or corridor alignments.

7.2.1 Alternatives within the Hierarchy

It has been argued that road schemes and their EISs should give greater consideration to public transport on the basis that increased provision of public transport could remove the need to improve the road or to improve it to the standard specified in the NDP 2007-2013. The EPA Guidelines recognise that public infrastructure projects such as national road schemes arise on account of plans, strategies and policies that have been previously developed at Governmental level. Consideration as to the appropriate mix between provision of road infrastructure and provision of public transport is a matter for Government in the context of policy decisions in this regard, including those relating to overall transport strategies and priorities.

The EIA process for road schemes is only concerned with the impact of individual road projects and, therefore, there is no scope within the process to consider high level alternative transportation needs and solutions. Neither the applicant nor the competent authority can be expected to examine options that have already been previously determined by a higher authority (for example, through a national plan or programme setting out policy as determined by Government).

In addition, Strategic Environmental Assessment (SEA) under the European Communities Environmental Assessment of Certain Plans and Programmes Regulations 2004 (S.I. No. 435 of 2004) requires the environmental assessment of transport plans and programmes so that the consideration of environmental issues associated with the various modes of transport can be undertaken within a recognised strategic framework. County Development Plans, for example, can provide one such framework. Accordingly, where transport plans or programmes are an integral element of such Plans, the Strategic Environmental Assessment of these plans should address the environmental issues associated with various transport options. Then, this should allow individual road scheme EISs arising from such plans to scope out issues to do with alternatives, within the concept of hierarchy, with greater certainty.

7.2.2 Alternative Route or Corridor Alignments

The EIA Directive requires that an EIS provide an outline of the main alternatives considered by the developer and the main reasons for the chosen option. The consideration of alternative route or corridor alignments is the most effective way in which a road scheme can avoid significant environmental effects.

As discussed previously, road schemes are developed in the framework of a national plan or programme, with a large number of road schemes being developed over the lifetime of the plan or programme. Within the plan or programme, it is necessary to develop individual road scheme proposals that are manageable in terms of the resources required for planning and design and construction, as well as prioritising individual road schemes so that available financial resources are targeted towards schemes of greatest need.

This leads to a situation where there are numerous road schemes at varying stages of route selection, planning and design, tendering and construction at any one time. Some of these schemes may be on the same route (for example, the N8 Dublin-Cork route) and adjacent to one another.

The route selection for individual schemes has to take into account their terminal points, i.e. where they will tie-in to the existing road network and/or an adjacent scheme being planned or under construction. Therefore, the consideration of alternative route or corridor alignments is constrained by the need to pre-determine the terminal points or the tie-in points for the scheme.

This approach has been challenged on the basis that the situation represents a piece-meal approach to road planning which acts to constrain the proper consideration of alternative route or corridor alignments and does not, therefore, produce the best overall route on environmental grounds. It is argued that the route or corridor selection should be made on the basis of an entire corridor (for example, the N8 Dublin-Cork route), free from the constraints of pre-determined terminal points and that a single EIA should be carried out for the entire corridor so as to identify what is purported

to be the best environmental route option.

The approach to identifying road schemes has to consider the need to develop scheme proposals that are manageable and deliverable in terms of resources, that serve existing towns and settlements and cater for future anticipated traffic patterns. Road scheme options are developed within the project-based framework provided by the *National Roads Project Management Guidelines* and the statutory EIA process, where environmental protection is achieved through avoidance of significant impacts during route selection and reduction of impacts through design.

However, the EIA Team should be conscious of the issues relating to the pre-determination of terminal points. In particular, where planning for schemes that are adjacent to each other is undertaken at the same time, it is important that the respective design teams consult with each other so that the scheme tie-in points can be coordinated, taking account of any relevant environmental issues. Efforts to coordinate in this manner should be reflected in the EIS and documented as part of the scheme planning process.

7.3 Cumulative Impacts

Cumulative impacts have been described in previous chapters. The concept of cumulative impacts is related to the previous issue of coordination between schemes. It is argued that environmental assessment of an entire programme, or an entire route corridor, is required in order to fully identify and assess impacts. In particular, this broader level of assessment is required to fully understand impacts that arise through the combination or cumulation of developments.

The assessment of cumulative impacts can be most appropriately addressed at the strategic level rather than through project level EIA. SEA allows road scheme EISs to scope out consideration of some cumulative impacts on the basis that they will have been addressed at the SEA stage. However, cumulative impacts are very relevant for road scheme EISs and are specified as issues to be addressed by the EIA Directive. The most effective way for cumulative impacts to be dealt with in the context of a road scheme EIA is to coordinate the assessment process with adjacent schemes where this is relevant. This approach should be clearly identified in the EIS. It is important for the EIA Team to be conscious of the potential for cumulative impacts and also to have an awareness of 'other approved developments' in the area.

7.4 Indirect Impacts

Indirect impacts are discussed in Chapter 4 and are defined as impacts on the environment which are not a direct result of the project, often produced away from the project or as a result of a complex pathway, e.g. through interaction with an aquifer/groundwater resources.

The EIA Directive and the 1993 Roads Act, as amended, requires that the issue of indirect impacts be addressed in the EIS. However, indirect impacts can be difficult to identify and assess. In addition, the activity generating the indirect impact may itself be subject to a separate regulatory procedure as illustrated by the example in Chapter 4 relating to surplus spoil management. This is also highlighted in the EPA guidelines where it is *"noted that such other activities may be subject to other separate regulation and conditioning under separate legislation and jurisdiction"*.

Many indirect impacts are related to the construction processes with little information available in relation to them during the planning and design stage or the preparation of the EIS.

As a result, EISs have tended to include general statements in relation to indirect impacts that pass the responsibility for managing such impacts to the road contractor. This approach may lead to requests for additional information from An Bord Pleanála resulting in potential delay and cost implications for the road scheme.

An EIS should provide information on indirect impacts to the extent possible. Where there is uncertainty as to the extent to which an EIS should address a particular indirect impact, it may be useful to consult with a statutory organisation with responsibility and expertise in the area in question, or with the National Roads Authority's Senior Project Manager and Environmental Manager.

7.5 Referencing of Technical Annexes

Proposed road developments tend to be large projects with a range of complex interactions with many aspects of the environment. As part of the preparation of a road scheme EIS, specialist consultants are normally employed to carry out the environmental analysis for their particular area of specialism. These specialist reports can be substantial in their own right and the information presented in the EIS is normally a distillation of the specialist reports concerned. In these circumstances, it is important that the EIS clearly references any specialist reports that have been relied upon in presenting the information in the EIS so that any interested reader may pursue a particular topic in further detail.

It is also important that the specialist documents that formed the basis of the EIS are available as part of the statutory EIA public consultation and are made available to relevant statutory consultee bodies.

In order to facilitate the widest possible dissemination of the EIS and related technical annexes, every effort should be made to make these documents available electronically and in a format that facilitates access to them and their reproduction.

7.6 Design Changes

Changes to the design of a road scheme can occur after the statutory consents have been obtained. Where road schemes are controversial and have attracted significant public attention, these design changes can be the focus of a challenge to the road scheme, on the basis that a change to the scheme design post-approval represents a departure from the approved scheme, including the approved EIS. In addition, it may be argued that the public consultation function of the EIA Directive has been undermined when changes to the design of the scheme or new information arise outside of the statutory process.

While the Compulsory Purchase Order/Motorway Scheme procedure does not provide for any flexibility post-consent as regards the land to be compulsorily acquired, some limited flexibility as regards changes to approved development is provided for in the EIA Directive. The Directive

includes provision (Annex II, Class 13) for changes to a project post consent. In that context, screening is required to assess the need for an EIS if significant environmental impacts are anticipated from the proposed changes. Some design changes can be accommodated postconsent as long as they remain within the approved land-take as set out in the CPO/MS, unless additional land is obtained through agreement or possibly a new CPO/MS. In many cases, the design changes are introduced as an additional environmental mitigation measure in response to conditions encountered during construction or pre-construction investigations that were unforeseen during the planning and design phases.

7.7 Global Issues – Climate Change

An EIS is concerned with the impacts and mitigation measures associated with a proposed project. Inevitably, some of these impacts relate to broader environmental issues of national and international importance such as climate change.

The NRA's *Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes* (National Roads Authority, 2006) outline a methodology for determining air quality impacts of proposed national road schemes. This methodology involves the use of Volume 11 of the Highways Agency's Design Manual for Roads and Bridges and its associated screening model, which can be used to predict carbon dioxide (CO_2) emissions for both the existing and proposed road networks based on road link length, Annual Average Daily Traffic (AADT), average speed and road type. In 2007, the NRA commissioned a study to investigate the sensitivity of the input parameters of the DMRB model and to compare the DMRB emission factors with those from other European studies. The results of this study demonstrated that the DMRB screening model is suitable for assessing CO_2 emissions from Irish national road schemes. However, when using the model, the parameters of vehicle speed, %HGV and road type, in particular, must be accurate, as these will significantly affect the predicted level of CO_2 resulting from the road scheme.

In general, a road EIS cannot identify a complete range of mitigation measures for greenhouse gas emissions or climate change. However, it is anticipated that the removal of traffic congestion in bypassed towns and cities and improved vehicle movements on secondary roads provided by the upgraded national road network will impact positively on CO_2 emissions.

The measures identified to reduce greenhouse gas emissions from transport and other sectors are the subject of international and national policy, and a range of measures in this regard is outlined in Ireland's National Climate Change Strategy, 2007-2012 (NCCS).

The Government aims to develop a sustainable transport system that will promote economic competitiveness by removing infrastructural bottlenecks and achieving a diverse fuel mix, whilst increasing social cohesion, enhancing road safety, improving access to the regions and reducing environmental impacts, including greenhouse gas emissions.

It is envisaged that the continued implementation of the NDP/ Transport 21 will result in a potential annual average reduction of approximately 0.5 million tonnes of CO_2 in 2010. Investment in the national road programme will complement the National Spatial Strategy, 2002

– 2020 and Regional Planning Guidelines by facilitating better integration of land-use planning and spatial development, and concentrating development in close proximity to transport infrastructure. An integral part of planning for future public transport provision will require encouraging commuters to move from private car use to more sustainable modes of travel. Existing traffic management measures in urban areas, such as quality bus corridors and park-and-ride facilities, will be enhanced under Transport 21 with further bus priority measures, car restraint measures, park and ride facilities, and improved cycling and pedestrian facilities.

A range of other measures for reducing greenhouse gas emissions in the transport sector is identified in the NCCS, including, fuel efficiency measures, vehicle registration tax (VRT) and motor tax, biofuels and efficient driving.

Examples of fuel efficiency measures include Government support for the EU objective of limiting average emissions from private cars to no more than 120g/km by 2012 through improvements in vehicle engine and other technology advancements. The restructuring of VRT and annual motor tax in 2008 to reflect the climate impact of individual vehicles and the proposed enhancement of the existing mandatory labelling system to provide more information on CO_2 emission levels and on fuel economy will also have a positive impact on CO_2 emissions.

In addition to the NCCS, the Government published a public consultation document, 2020 Vision – Sustainable Travel and Transport in 2008. This document proposes a number of sustainable mobility indicators and targets for reducing both greenhouse gas emissions and energy consumption from the transport sector over the period to 2020. A multi-criteria approach is promoted, which balances the need for economic efficiency, reduced environmental impact and social cohesion as well as proposing the appropriate institutional arrangements requisite to deliver a sustainable transport system.

An integral component of ongoing analysis of investment needs for the transport sector will be the development of a national capacity to model impacts on traffic flows, as well as environmental impacts such as greenhouse gas emissions. Steps are currently being put in place, undertaking a more in-depth modelling of the emissions reduction associated with the Transport 21 investment programme.

An Intelligent Transport Systems Strategy, currently being developed by the Department of Transport, will integrate the application of information and communication technologies (ICT) for use in transport management strategies to provide for optimum integration of transport systems. The Strategy will include provision for measures such as integrated ticketing and real-time journey information.

Consideration is also given in the 2020 Vision – Sustainable Travel and Transport document to the potential introduction of fiscal measures, including road pricing or congestion charging, to reduce transport demand, once adequate supply-side infrastructure is in place.

All these measures are to be addressed as part of Government transport and planning policy and, accordingly, are not appropriate to a road scheme EIS. The EIS should address how a particular scheme may impact positively or negatively on CO_2 emissions. However, the EIS should indicate that climate change issues, including mitigation measures, are the subject of specific policies and

strategies as set out in relevant Government documentation, including the NCCS.

An example of how for climate change can be dealt with in a road scheme EIS is provided in Box 23.

Box 23 – Addressing Climate Change in an EIS

Macroclimate
The measures designed to reduce greenhouse gas emissions from road transport are detailed in the National Climate Change Strategy, 2007-2012. This does not define the measures to be taken at scheme level but rather details national policies aimed at reducing emissions and providing alternatives to road travel as part of a comprehensive strategy to tackle emissions from all sources.

Microclimate
An assessment of CO_2 emissions from the individual scheme should be undertaken as outlined in Volume 11 of the Highways Agency Design Manual for Roads and the *Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes* (NRA, 2006).

No mitigation measures are considered to be necessary although care will be taken in the detailed design of landscape and structure to minimise any local impacts.

In addition, construction energy and vehicle operation energy as describe by Joulesave "Integration of the Measurement of Energy Usage into Road Design" should be addressed for the specific scheme in the preparation of the EIS.

7.8 Fixed Versus Variable Demand

Predicted future traffic flows are an important consideration in an EIS as they form the basis for the assessment of many of the environmental impacts, particularly those relating to noise and air quality. On individual road links the demand for travel is normally expressed in terms of measurable units, either the total number of vehicles on the route (which is known as the Annual Average Daily Traffic, AADT), or the number of passenger car unit equivalents (pcu). Usually the traffic is measured on the existing road and is then forecast over a specific design period using approved growth indices. Instructions relating to the growth factors to be used for national routes are contained in the NRA's *Project Appraisal Guidelines* (NRA, 2008).

When a road improvement scheme is implemented, there are a number of behavioural responses that may occur within the travelling population. These are:

1. A change of route (known as reassignment);
2. A change in the timing of the trip (retiming);
3. An increase in the number of trips (frequency);
4. A change in the origin or destination of the trip (redistribution);
5. A change from car to public transport or vice versa (mode choice), and
6. The making of entirely new trips (generation).

A transport model which reflects reassignment only is referred to as 'fixed demand' (or 'fixed trip

matrix' because the total number of trips in the do-nothing scenario (the existing road) is the same as in the do-something scenario (the existing road and the new road)). Where one or more of the other responses are also included, then it is known as variable demand (or a 'variable trip matrix traffic model').

The NRA's requirements regarding traffic modelling and economic appraisal are detailed in Chapters 4 and 5 of the Authority's *Project Appraisal Guidelines*.
See http://www.nra.ie/Publications/ProjectAppraisal/

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REFERENCES AND SOURCES OF FURTHER INFORMATION

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National Roads Authority, 2006. *Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub, Post, Prior and During the Construction of National Road Schemes*. Dublin: NRA.

National Roads Authority, 2006. *Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes*. Dublin: NRA.

National Roads Authority, October 2004. *Guidelines for the Treatment of Noise and Vibration in National Road Scheme)*. 1st Rev. Dublin: NRA.

National Roads Authority. *Design Manual for Road and Bridges*. Dublin: NRA.

Website (Environment) of the European Commission. Available at: http://ec.europa.eu/environment/index_en.htm

Website of the Department of the Environment, Heritage and Local Government. Available at: http://www.environ.ie/en/

Website of the Department of Transport. Available at: http://www.transport.ie/

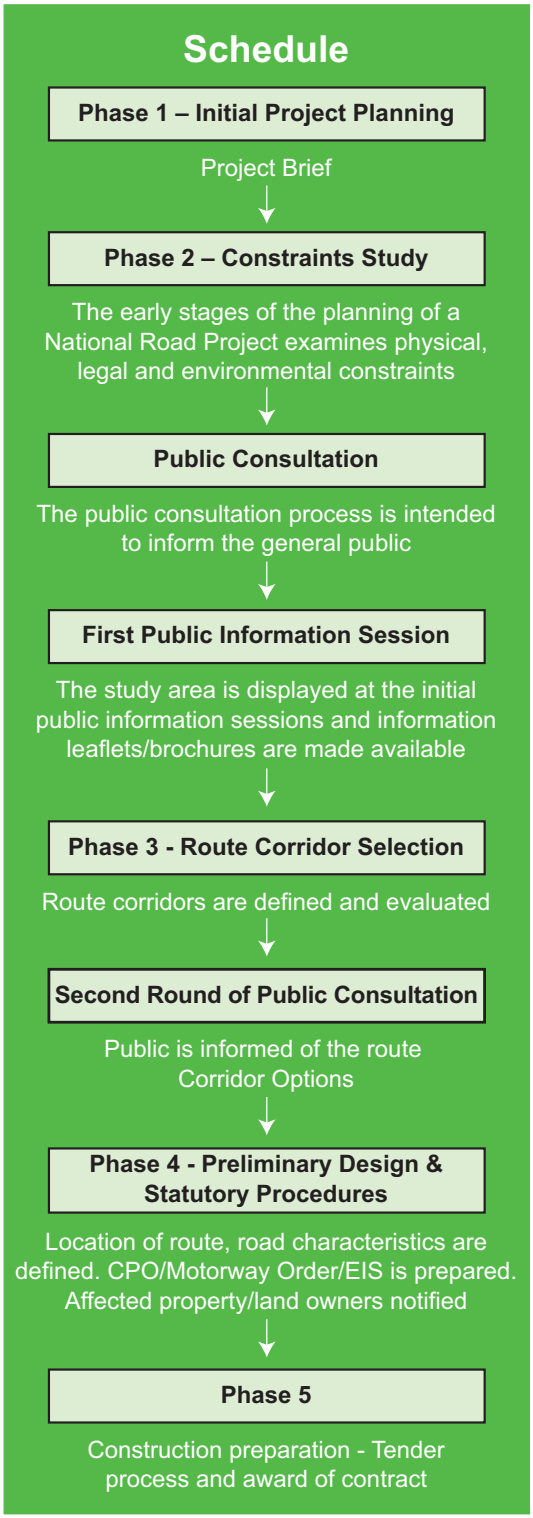
Website of the Environmental Protection Agency. Available at: http://www.epa.ie/

Website of the National Roads Authority. Available at: http://www.nra.ie/

APPENDICES

Appendix 1.

National Road Project Planning Procedures and Public Involvement.



Appendix 2.

Consolidated Version of Section 50 of the Roads Act, 1993, as amended.

50 (1) (a) A road authority or the Authority shall prepare a statement of the likely effects on the environment ('environmental impact statement') of any proposed road development it proposes consisting of

(i) the construction of a motorway,
(ii) the construction of a busway,
(iii) the construction of a service area, or
(iv) any prescribed type of proposed road development consisting of the construction of a proposed public road or the improvement of an existing public road.

(b) Where the Minister considers that any proposed road development (other than development to which paragraph (a) applies) consisting of the construction of a proposed public road or the improvement of an existing public road would be likely to have significant effects on the environment, he shall direct the road authority to prepare an environmental impact statement in respect of such proposed road development and the authority shall comply with such direction.

(c) Where a road authority considers that any proposed road development (other than development to which paragraph (a) applies) consisting of the construction of a proposed public road or the improvement of an existing public road would be likely to have significant effects on the environment, it shall inform the Minister in writing and where the Minister concurs with the road authority he shall give a direction to the road authority under paragraph (b).

(d) Where a proposed road development (other than development to which paragraph (a) applies) consisting of the construction of a proposed public road or the improvement of an existing public road would be located on:

(i) a special area of conservation,
(ii) a site notified in accordance with Regulation 4 of the European Communities (Natural Habitats) Regulations, 1997 (S.I. No. 94 of 1997),
(iii) an area classified pursuant to paragraph (1) of (2) of article 4 of Council Directive No. 79/409/EEC of 2 April, 1979, on the conservation of wild birds (O.J. No. L 103, 25 April, 1979),
(iv) a site where consultation has been initiated in accordance with article 5 of Council Directive 92/43/EEC of 21 May, 1992, on the conservation of natural habitats and of wild fauna and flora (O.J. No. L 206, 22 July, 1992),
(v) land established or recognised as a nature reserve within the meaning of section 15 or 16 of the Wildlife Act, 1976 (No. 39 of 1976) ,
(vi) land designated as a refuge for fauna under section 17 of the Wildlife Act, 1976 (No. 39 of 1976),

the road authority concerned shall decide whether the proposed road development would or would not be likely to have significant effects on the environment, and if the authority decides that the proposed road development would be likely to have such effects, paragraph (c) shall apply accordingly.

(e) Where a decision is being made pursuant to this subsection on whether a proposed road development would or would not be likely to have significant effects on the environment, the Minister or the road authority concerned (as the case may be) shall have regard to the criteria specified for the purposes of article 27 of the European Communities (Environmental Impact Assessment) Regulations, 1989.

(f) Where a road authority makes a decision pursuant to paragraph (d) on whether a proposed road development would or would not be likely to have significant effects on the environment, it shall make the said decision available for inspection by members of the public.

(2) An environmental impact statement shall contain the following specified information—

(a) a description of the proposed road development comprising information on the site, design and size of the proposed road development;

(b) a description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects;

(c) the data required to identify and assess the main effects which the proposed road development is likely to have on the environment;

(d) an outline of the main alternatives studied by the road authority concerned and an indication of the main reasons for its choice, taking into account the environmental effects;

(e) a summary in non-technical language of the above information.

(3) An environmental impact statement shall, in addition to and by way of explanation or amplification of the specified information referred to in subsection (2), contain further information on the following matters

(a) (i) a description of the physical characteristics of the whole proposed road development and the land-use requirements during the construction and operational phases,

(ii) an estimate, by type and quantity, of expected residues and emissions (including water, air and soil pollution, noise, vibration, light, heat and radiation) resulting from the operation of the proposed road development;

(b) a description of the aspects of the environment likely to be significantly affected by the proposed road development, including in particular
- human beings, fauna and flora,
- soil, water, air, climatic factors and the landscape,
- material assets, including the architectural and archaeological heritage, and the cultural heritage,
- the inter-relationship between the above factors;

(c) a description of the likely significant effects (including direct, indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative) of the proposed road development on the environment resulting from—

- the existence of the proposed road development,
- the use of natural resources,
- the emission of pollutants, the creation of nuisances and the elimination of waste,

and a description of the forecasting methods used to assess the effects on the environment;

(d) an indication of any difficulties (technical deficiencies or lack of know-how) encountered by the road authority concerned in compiling the required information;

(f) a summary in non-technical language of the above information;

to the extent that such information is relevant to a given stage of the consent procedure and to the specific characteristics of the proposed road development or type of proposed road development concerned, and of the environmental features likely to be affected, and the road authority preparing the environmental impact statement may reasonably be required to compile such information having regard, inter alia, to current knowledge and methods of assessment.

(4) (a) If a road authority, before submitting an environmental impact statement in accordance with section 51, so requests, the Minister shall, after consulting the road authority concerned and the bodies and persons referred to in paragraph (b) of subsection (3) of that section, give a written opinion on the information to be contained in such statement.

(b) The giving of a written opinion in accordance with this subsection shall not prejudice the exercise by the Minister of his powers pursuant to subsection (4) of section 51 to require the road authority concerned to furnish him with specified additional information in relation to the likely effects on the environment of the proposed road development.

(5) Where the Authority proposes the construction of a proposed road development consisting of anything referred to in subsection (1) references to road authority in the other provisions of this section in respect of the development are to be read as references to the Authority.

Appendix 3.

Useful Contacts

1. Archaeology/Architectural Heritage

Development Applications Unit,
Department of the Environment, Heritage and Local Government,
Dún Scéine,
Harcourt Lane,
Dublin 2.
Telephone: (01) 8883113

Heritage Policy and Architectural Protection Unit,
Department of the Environment, Heritage and Local Government,
Dún Scéine,
Harcourt Lane,
Dublin 2.
Telephone: (01) 8883104

National Monuments Service,
Department of the Environment, Heritage and Local Government,
Dún Scéine,
Harcourt Lane,
Dublin 2.
Telephone: (01) 8883109

2. Ecology

National Parks and Wildlife Service - Regional Offices

NPWS Regional Office – South Eastern Region (Carlow, Kilkenny, Wexford & Wicklow),
Wicklow Mountains National Park,
Kilafin,
Laragh,
Co.Wicklow.
Telephone: (0404) 45800

NPWS Regional Office – Mid-Western Region (Clare and Galway (except Galway West)),
3rd floor Plaza Offices,
Headford Road,
Galway,
County Galway.
Telephone: (091) 704200

NPWS Regional Office – North Eastern Region (Dublin, Kildare, Laois, Meath and Offaly),
Conway Estates,
Station Road,
Kildare Town.
Telephone: (045) 520622

NPWS Regional Office – Western Region (Mayo, Galway West),
Clifden Court,
Market Lane,
Clifden,
County Galway.
Telephone: (095) 60900

NPWS Regional Office – Mid Southern Region (East Cork, Limerick, Tipperary (North Riding), Tipperary (South Riding) & Waterford),
Government Office,
St. Conlon's Road,
Nenagh,
County Tipperary.
Telephone: (067) 44287

NPWS Regional Office – South Western Region (West Cork & Kerry),
Muckross House,
Killarney National Park,
Killarney,
County Kerry.
Telephone: (064) 31440

NPWS Regional Office – Northern Region (Donegal, Leitrim West & Sligo),
Glenveagh National Park,
Church Hill,
Letterkenny,
County Donegal.
Telephone: (074) 9137090

NPWS Regional Office – North Midlands Region (Cavan, Leitrim East, Longford, Monaghan, Roscommon & Westmeath),
Ballinafad,
via Boyle,
County Sligo
Telephone: (071) 9666700

3. Fisheries

Regional Fisheries Boards

Eastern Regional Fisheries Board,
15a Main Street,
Blackrock,
Co. Dublin.
Web: http://www.fishingireland.net
Email: info@erfb.ie
Tel: +353 1 2787022
Fax: +353 1 2787025

Southern Regional Fisheries Board,
Anglesea Street,
Clonmel,
Co.Tipperary,
Web: http://www.srfb.ie/
Email: enquiries@srfb.ie
Tel: +00 353 52 23624
Fax: +00 353 52 23971

South Western Regional Fisheries Board,
Sunnyside House,
Macroom,
Co. Cork.
Web: http://www.swrfb.com
E-mail: swrfb@swrfb.ie
Tel: +353 26 41221
Fax: +353 26 41223

Shannon Regional Fisheries Board,
Ashbourne Business Park,
Dock Road,
Limerick.
Web: http://www.shannon-fishery-board.ie
Email: info@shannon-fishery-board.ie
Tel: +353 61 300238
Fax: + 353 61 300308

and

Shannon Regional Fisheries Board,
Tudenham Lodge,
Mullingar,
Co. Westmeath.
Email: matt@shannon-fishery-board.ie
Tel: +353 44 48769
Fax: +353 44 44644

Western Regional Fisheries Board,
The Weir Lodge,
Earl's Island,
Galway.
Web: http://www.wrfb.ie
Email: info@wrfb.ie
Tel: +353 91 563118
Fax: +353 91 566335

North Western Regional Fisheries Board,
Ard na Rí House,
Ballina,
Co Mayo,
Web: www.northwestfisheries.ie
Email: nwrfb@iol.ie
Tel: +353 96 22623
Fax: +353 96 70543

Northern Regional Fisheries Board,
Station Road,
Ballyshannon,
Co. Donegal.
Web: http://www.nrfb.ie
Email: ceo@nrfb.ie
Tel: +353 71 9851435
Fax: +353 71 9851816

Appendix 4.

Checklist of Criteria for Evaluating the Significance of Impacts

Instructions for Scoping

This checklist is designed to help users decide whether or not an impact is likely to be significant and is to be used in conjunction with the Scoping Checklist. The Scoping Checklist provides a list of questions to help identify where there is the potential for interactions between a project and its environment. This checklist is designed to help decide whether those interactions - effects - are likely to be significant.

Those responsible for scoping often find difficulties in defining what is "significant". A useful simple check is to ask whether the effect is one that ought to be considered and to have an influence on the development consent decision. At the early stages of a project there is likely to be little information on which to base this decision but the following list of questions may be helpful.

The questions to be asked are the same as in Screening but at the Scoping stage it is important to provide as much information as possible on why the effect is considered likely to be significant, rather than a simple "yes/no" answer.

Questions to be Considered

1. Will there be a large change in environmental conditions?
2. Will new features be out-of-scale with the existing environment?
3. Will the effect be particularly complex?
4. Will the effect extend over a large area?
5. Will there be any potential for transfrontier impact?
6. Will many people be affected?
7. Will many receptors of other types (fauna and flora, businesses, facilities) be affected?
8. Will valuable or scarce features or resources be affected?
9. Is there a risk that environmental standards will be breached?
10. Is there a risk that protected sites, areas, features will be affected?
11. Is there a high probability of the effect occurring?
12. Will the effect continue for a long time?
13. Will the effect be permanent rather than temporary?
14. Will the impact be continuous rather than intermittent?
15. If it is intermittent will it be frequent rather than rare?
16. Will the impact be irreversible?
17. Will it be difficult to avoid, or reduce or repair or compensate for the effect?

Source: *DoEHLG EIA Guidance for consent authorities regarding sub-threshold development and European Commission, Guidance on EIA: Scoping, June 2001*

Appendix 5. Guidance on When to Consult with the Regional Fisheries Boards, the National Monuments Service and the National Parks and Wildlife Service.

Extract from Article 121 of the Planning and Development Regulations 2001 – Prescribed Authorities to be Notified for the Purposes of Local Authority Development Requiring EIA (Section 175 of the Planning and Development Act, 2000).

(c) where it appears to the authority that the proposed development:

(i) would involve the carrying out of works to a protected structure or proposed protected structure, or to the exterior of a structure which is located within an architectural conservation area or an area specified as an architectural conservation area in a draft of a proposed development plan or a proposed variation of a development plan

(ii) might detract from the appearance of a structure referred to in sub-paragraph (i)

(iii) might affect or be unduly close to:

(I) a cave, site, feature or other object of archaeological, geological, scientific, ecological or historical interest

(II) a monument or place recorded under section 12 of the National Monuments (Amendment) Act, 1994

(III) a historic monument or archaeological area entered in the Register of Historic Monuments under Section 5 of the National Monuments (Amendment) Act, 1987

(IV) a national monument in the ownership or guardianship of the Minister for Arts, Heritage, Gaeltacht and the Islands, under the National Monuments Acts, 1930 to 1994

(iv) might obstruct any scheme for improvement of the surroundings of or any means of access to any structure, place, feature or object referred to in subparagraph (iii)

— to the Minister for Arts, Heritage, Gaeltacht and the Islands, the Heritage Council, and An Taisce — the National Trust for Ireland, and in the case of development of a type referred to in sub-paragraph (i) or (ii), An Chomhairle Ealaíon and Bord Fáilte Éireann

(f) where it appears to the authority that:

(i) the proposed development might cause the significant abstraction or addition of water either to or from surface or ground waters, whether naturally occurring or artificial

(ii) the proposed development might give rise to significant discharges of polluting matters or other materials to such waters or be likely to cause serious water pollution or the danger of such pollution

(iii) the proposed development would involve the carrying out of works in, over, along or adjacent to the banks of such waters, or to any structure in, over or along the banks of such waters, which might materially affect the waters

— to the appropriate Regional Fisheries Board and, in any case where the waters concerned are listed in Part 1 of Annex 1 of the Schedule to the British-Irish Agreement Act, 1999, to Waterways Ireland

(g) where it appears to the authority that the proposed development might have significant effects in relation to nature conservation

– to the Heritage Council, the Minister for Arts, Heritage, Gaeltacht and the Islands and An Taisce – the National Trust for Ireland

Note – *the functions of the Minister for Arts, Heritage, Gaeltacht and the Islands, in relation to archaeological protection and nature conservation have been transferred to the Minister for the Environment, Heritage and Local Government.*

Appendix 6.

Sample Table of Contents for a Road EIS

Non-Technical Summary

- this should be included in the EIS and reproduced as a separate document

Part I General Information

Introduction

- History of the Scheme Objectives
- County Development Plan
- Legislative Requirement for EIA
- Scope of EIS
- Structure of EIS

Background to the Scheme

- Need for the Scheme
- Functions of the Scheme
- Government Policy
- PPP Approach (where relevant)
- Public Consultation
- Alterations/Revisions

Description of the Scheme

- Location
- Description of preferred route
- Physical characteristics of the proposed scheme

Alternative Routes Considered

- Alternative Routes Considered
- Methodology of Comparison
- Assessment of Route Options
- Preferred Route
- 'Do-minimum' option
- Alternative Tolling Arrangements Considered

Part II Significant Environmental Effects and Proposed Mitigation Measures

Human Beings

- Introduction
- Description of the existing environment
- Appraisal method used for assessment of impacts
- Predicted impacts of the scheme
- Proposed mitigation and avoidance measures
- Difficulties encountered in compiling information

- Cumulative impacts and impact interrelations
- Assessment Conclusions
(Note: where relevant, these sub headings should be repeated for each of the environmental topic areas)

Flora and Fauna
Soils and Geology
Water
Air Quality
Noise and Vibration
Landscape
Cultural Heritage
Material Assets
Construction Impacts
Road Lighting Impacts
Climate
Interrelationship between Environmental Factors
Schedule of Environmental Commitments

Part III Untolled Scenario (Where Relevant)

Introduction
Socio-Economic Impact
Traffic Impact
Flora and Fauna
Soils and Geology
Water
Air Quality
Noise and Vibration
Landscape
Cultural Heritage
Archaeology
Material Assets
Construction Impacts
Road Lighting
Climate
Interrelationship
Schedule of Environmental Commitments

Glossary of Terms

Alternatives	The EIA Regulations giving effect to the 1985 and 1997 EIA Directives require an outline of the main alternatives studied by the road authority and an indication of the main reasons for its choice, taking into account the environmental effects. Alternatives typically relate to alternative route alignments, alternative designs and alternative processes.
Competent Authority	Any authority charged with examining an Environmental Impact Statement with a view to issuing consent to a proposed development. An Bord Pleanála (ABP) is the competent authority in relation to road schemes under the Roads Act, 1993, as amended by the Planning and Development Act, 2000.
CPO	Compulsory Purchase Order
Design and Build (D&B)	A form of contract for procuring national road schemes that transfers greater risk from the road authority to the contractor. The contractor undertakes some of the detailed design of the scheme after approval has been obtained from An Bord Pleanála. This allows the contractor to introduce innovative methods to aspects of the scheme design, including in relation to environmental mitigation measures and as regards methods of construction.
DMRB	National Roads Authority's and Highways Agency's (UK) *Design Manual for Roads and Bridges*
'Do-nothing' Scenario	The situation or environment that would exist if no intervention or road construction/road upgrade was carried out.
'Do-minimum' Scenario	The situation or environment that would exist if minimal intervention or development were carried out.
'Do-something' Scenario	The situation or environment that would exist if the proposed road scheme is implemented.
Early Contractor Involvement	Defines a situation where the contractor is appointed at an early stage of the planning process and accordingly can input into final design and environmental issues included in the EIS.

Environmental Impact Assessment – EIA	The process of examining the environmental effects of the proposed road scheme development - from consideration of environmental aspects at design stage through to preparation of an Environmental Impact Statement, evaluation of the EIS by the competent authority and the subsequent decision as to whether the development should be permitted to proceed, also encompassing public response to that decision.
Environmental Impact Statement – EIS	Astatement of the effects, if any, which the proposed development, if carried out, is likely to have on the environment.
Impact	The degree of change in the environment resulting from a road scheme development.
Impact Interactions	The reactions between impacts on different environmental factors, whether between the impacts of just one project or between the impacts of other projects in the area.
Indirect Impact	Impacts on the environment which are not a direct result of the project, often produced away from the project or as a result of a complex pathway.
Likely Effects / Impacts	The effects that are expected to take place - based on an informed understanding of the interaction of the proposed development and the receiving environment.
Maximum Impact	The maximum expected impact arising from the interaction of a particular feature of the proposed scheme with the environment. May be used in situations where flexibility is required in the EIS to facilitate possible design or construction modifications under a Design and Build or Public Private Partnership contract.
Methodology	The specific approach or techniques used to analyse impacts or describe environmental features and conditions.
Mitigation	Measures designed to avoid, reduce, remedy or compensate for impacts.

Mitigation Measures	The manner by which a proposed road scheme development is modified to avoid, reduce or remedy anticipated adverse environmental effects.
MS	Motorway Scheme, see section 47(1) of Roads Act, 1993.
National Roads Project Management Guidelines (NRPMG)	The National Roads Authority's guidelines for the management of the planning and implementation of national road schemes.
National Road Regional Design Offices (NRRDO)	Offices established by local authorities in conjunction with the NRA to manage planning and implementation of national road schemes.
Performance Standard	The standard of mitigation to be achieved as opposed to the specific mitigation measure to be used.
Public Private Partnership	A Public Private Partnership (PPP) is a partnership between the public and private sector for the purpose of delivering a project or service traditionally provided by the public sector.
Road Authority	The local authority in whose functional area the proposed road will be located or the local authority, as the lead authority, where a road scheme proposal crosses more than one administrative area.
Receptor	Any element in the environment which is subject to impacts.
Schedule of Environmental Commitments	A list of all environmental mitigation measures that the road authority proposes to undertake in conjunction with the construction of the scheme.
Scoping	The process of identifying the significant issues which should be addressed by a particular Environmental Impact Statement.

Screening	The process of assessing whether a road scheme should be subject to Environmental Impact Assessment based inter alia on the nature, size or location of the proposed scheme and on the significance or environmental sensitivity of the receiving environment.
Sensitivity	The potential of a receptor to be significantly changed.
Significance	The sensitivity of a receiving environment to change or the consequence of change for the receiving environment.
Statutory EIS	A term sometimes used to describe an EIS prepared in accordance with applicable statutory requirements, the Roads Act, 1993, as amended and the 1994 Regulations.
Statutory Consultees	Organisations and authorities stipulated by legislation (in Acts and Regulations) that are to be sent a copy of the road scheme environmental impact statement, together with a notice in the prescribed form stating that the road authority has made an application to ABP for approval of the proposed road development.
Sub-Threshold Schemes	Schemes that do not meet the automatic requirements for EIA based on type and scale.
Threshold	The magnitude and type of a project which, if exceeded, will trigger the requirement for an Environmental Impact Assessment to be carried out.
"Worst Case" Scenario	The situation or environment that would exist if the proposed road scheme is implemented and operated under worst-case traffic conditions.

APPENDICES