




Peer Review of Environmental Impact Assessment Report for River Deel Flood Relief Scheme, Crossmolina Co. Mayo.

Department of Public Expenditure and Reform

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Introduction

Enviroguide Consulting were contracted by the Department of Public Expenditure and Reform to carry out a peer review on the Environmental Impact Assessment report (EIAR) that has been prepared to support the proposed development, namely the River Deel Flood Relief Scheme, Crossmolina, Co. Mayo.

This peer review will be carried out in two stages, the first a high-level review to determine the compliance of the EIAR with the requirements of the EIAR Directive 2014/52/EU, and the EPA Guidance document *Guidance on the Information to be contained in Environmental Impact Assessment Reports – EPA 2017 (Draft)*

This report primarily assesses the EIAR at a high level for compliance with the Directive and Guidelines, although it does highlight some technical issues that have emerged during this review process.

A further detailed technical review will be carried out as the next stage of this process.

The EIA Directive

The EIA Directive (85/337/EEC) is in force since 1985 and applies to a wide range of defined public and private projects. The EIA Directive was amended in 1997, 2003, 2009, 2011 and 2014 by Directives 97/11/EC; 2003/35/EC, 2009/31/EC, 2011/92/EU and 2014/52/EU. The EIA Directive requires environmental impact assessments to be carried out for certain projects as listed in Annex I of the Directive. The EIA Directive, and amendments, are transposed into Irish law through the Planning and Development Acts 1996 to 2019 in particular S.I. No. 296 of 2018.

Article 3 (1) of the EIA Directive 2014/52/EU requires that:

The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:

- a) population and human health;
- b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;
- c) land, soil, water, air and climate;
- d) material assets, cultural heritage and the landscape;
- e) the interaction between the factors referred to in points (a) to (d).

Article 5 (1) requires that 'the developer shall include at least:

- a) a description of the project comprising information on the site, design, size and other relevant features of the project;

- b) a description of the likely significant effects of the project on the environment;
- c) a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;
- d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;
- e) a non-technical summary of the information referred to in points (a) to (d); and f) any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.'

Clear, concise, unambiguous information is essential throughout an EIAR. A systematic approach, standard descriptive methods and the use of replicable assessment techniques and standardised impact descriptions contribute to ensuring that all likely significant effects are adequately considered and clearly communicated.¹

The focus of the EIAR is to assess 'impacts' and their 'effects' on the environment. A **table** setting out the terminology and methodology used for assessing the 'impact' significance and the corresponding 'effect' must be provided. Please refer to the EPA 2017 Draft Guidelines on the *Information to be Contained in Environmental Impact Assessment Reports*. This impact must be assessed e.g. is the impact "significant", "moderate", or "slight", and the corresponding 'effect' of the 'impact' must be described e.g. positive, significant, temporary, long-term, etc.

Definition of Quality of Effects.

Quality	Definition
Positive Effects	A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
Neutral Effects	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error
Negative/adverse Effects	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).

Definition of Significance of Effects.

Significance of Effects	Definition
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¹ Guidance on the Information to be contained in Environmental Impact Assessment Reports – EPA 2017 (Draft)

Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration, or intensity alters a sensitive aspect of the environment
Very Significant	An effect which, by its character, magnitude, duration, or intensity significantly alters most of a sensitive aspect of the environment.
Profound Effects	An effect which obliterates sensitive characteristics

Definition of Duration of Effects.

Quality	Definition
Momentary Effects	Effects lasting from seconds to minutes
Brief Effects	Effects lasting less than a day
Temporary Effects	Effects lasting less than a year
Short-term Effects	Effects lasting one to seven years.
Medium-term Effects	Effects lasting seven to fifteen years.
Long-term Effects	Effects lasting fifteen to sixty years
Permanent Effects	Effects lasting over sixty years
Reversible Effects	Effects that can be undone, for example through remediation or restoration

Article 5(3) a of the Directive requires that the developer shall ensure that the environmental impact assessment report is prepared by competent experts; and

Recital 33 of Directive 2014/52/EU requires that “Experts involved in the preparation of environmental impact assessment reports should be qualified and competent. Sufficient expertise, in the relevant field of the project concerned, is required for the purpose of its examination by the competent authorities in order to ensure that the information provided by the developer is complete and of a high level of quality.”

Annex IV of the Directive states ‘A description of the factors specified in Article 3(1) likely to be significantly affected by the project: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.’

Prescribed Environmental Factor	Typical Headings under which Environmental Factors could be addressed in an EIAR	Typical Topics
Material Assets	Roads & Traffic	Construction Phase Operational Phase Unplanned Events [i.e. Accidents]
	Built Services	Electricity Telecommunications Gas Water Supply Infrastructure Sewerage
Water	Surface Water	Construction Phase Operational Phase Unplanned Events [i.e. Accidents]
	Ground Water	Construction Phase Operational Phase Unplanned Events [i.e. Accidents]
	Waste Water	Effluent Characteristics On-site Treatment Capacity of Municipal Treatment Plant
The Landscape	Visual Impact	Context Character Significance Sensitivity
	Amenity	Public access Public amenities Recreation Tourism

The inclusion of a table like this at the beginning of an EIAR can be helpful, because relevant issues and their arrangement as headings and topics within an EIAR varies from project to project. The table shows how the selected headings/topics in the project’s EIAR relate to the prescribed environmental factors. This will show how each of the environmental factors has been addressed, demonstrating compliance with the statutory requirements.²

² Guidance on the Information to be contained in Environmental Impact Assessment Reports – EPA 2017 (Draft)

Chapter 1 Introduction:

In general, the section dealing with the structure of the EIAR is unclear and lacks detail. As per the EPA Guidelines we would recommend the use of a Table (See example below) to set out clearly how the EIAR will be structured.

The structure of the EIAR is set out in Table 1-1 below.

Table -1 Structure of the EIAR

Chapter	Title	Content
1	Introduction and Methodology	Chapter 1 sets out the purpose, methodology and scope of the document.
2	Background	Chapter 2 sets the background information, baseline, and national, regional and local policy framework for the Proposed Development.
3	Description of the Proposed Development & Assessment of Alternatives	As required under Article 5(1)(a), Chapter 2 provides a description of the site, design and scale of Proposed Development, and, as required under Article 5(d), an evaluation of the reasonable alternative design approaches.
4	Population and Human Health	Chapter 4 covers the requirement for assessment on potentially significant effects to population and human health as required under Article 3(1)(a).
5	Biodiversity	Chapter 5 covers the requirement of Article 3(1)(b) to assess potentially significant effects on biodiversity (which previously referred only to 'fauna and flora'), having particular attention to species and habitats protected under the Habitats Directive and the Birds Directive.
6	Land and Soils	Chapter 6 covers the requirement under Article 3(1)(c) on Land and Soil to assess the type of soil and geology in the area of the Proposed Development and identifies any potentially significant effects.
7	Hydrology	Chapter 7 covers the requirement under Article 3(1)(c) to assess potentially significant effects to water quality arising from the Proposed Development. This chapter will assess any potential effects from pollution and discharges to surface water.
8	Air Quality and Climate	Chapter 8 covers the requirement under Article 3(1)(c) on Air and Climate to assess potentially significant effects to air quality in the surrounding environment.
9	Noise and Vibration	Chapter 9 covers the requirement to assess potentially significant effects from airborne noise and vibration as required under Article 3(1)(a) on Human Health.

10	Landscape and Visual Amenity	Chapter 10 covers the requirement under Article 3(1)(d) to assess potentially significant effects on the landscape. This chapter will assess any potential visual impacts to landscape caused by the Proposed Development.
11	Archaeology and Cultural Heritage.	Chapter 11 covers the requirement under Article 3(1)(d) to assess potentially significant effects on cultural heritage.
12	Material Assets _Traffic, Utilities and Waste Management	Chapter 12 covers the requirement under Article 3(1)(d) to assess potentially significant effects on material assets. This chapter will identify impacts to existing utilities and infrastructure from the development of the Proposed Development. Article 5(1), Annex IV, point 1(d) requires estimates of quantities and types of waste produced during construction and operation phase. Chapter 12 will also present an assessment of how resources and waste will be managed for the Proposed Development.
13	Risk Management	Chapter 13 covers the requirement under Article 3(2) to include the expected effects deriving from the vulnerability of the Proposed Development to risks of major accidents and/or disasters.
14	Interactions	As required under Article 3(1)(e), Chapter 14 provides an assessment of the interaction between all of the environmental aspects referred to in this EIAR.
15	Mitigation and Monitoring	Chapter 15 describes mitigation and monitoring as required under Article 5(1) in order to avoid, prevent, reduce, or if possible, offset any identified significant adverse effects on the environment and, where appropriate, describes any proposed monitoring arrangements.

This approach employs standard descriptive methods, replicable prediction techniques and standardised impact descriptions to provide an appropriate evaluation of each environmental topic under consideration.

The presentation of the project team in Table 1.2 does not fully comply with the requirement under Article 5(3)a, and Recital 33 (competent experts) in that it does not fully set out the roles of each consultant in the respective Chapters. These require that *'Experts involved in the preparation of environmental impact assessment reports should be qualified and competent. Sufficient expertise, in the relevant field of the project concerned, is required for the purpose of its examination by the competent authorities in order to ensure that the information provided by the developer is complete and of a high level of quality'*.

The EPA Guidelines recommend that *The introduction to the EIAR should include a list of the experts who have contributed to an EIAR, showing which parts of the EIAR they have worked on, their qualifications, experience and any other relevant credentials. This facilitates an assessment of the competency in the team who have prepared the EIAR.*

It is advised to fully comply with the requirement for competent experts that a table be set out as follows in Chapter 1 and a short bio of the author(s) of each Chapter be included in **each** Chapter:

Table 1-2 EIAR Project Team

Chapter	Consultant Name and address	Specialist Area
1.0 Introduction and Methodology including Non-Technical Summary	Company A Address Consultant(s)	Multidisciplinary Planning and Environmental Consultants
2.0 Background	Company B Address Consultant(s)	Multidisciplinary Planning and Environmental Consultants
3.0 Project Description and Alternatives Examined	Company C Address Consultant(s)	Multidisciplinary Planning and Environmental Consultants
4.0 Population and Human Health	Company A Address Consultant(s)	Multidisciplinary Planning and Environmental Consultants
5.0 Biodiversity	Company D Address Consultant(s)	Ecologists
6.0 Land and Soils		
7.0 Hydrology & Water		
8.0 Air Quality & Climate		
9.0 Noise and Vibration		
10.0 Landscape & Visual Amenity		
11.0 Archaeology, Architectural, and Cultural Heritage		

12.0 Material Assets: Traffic, Waste, and Utilities	Company A Address Consultant(s) Company R Address Consultant(s)	Multidisciplinary Planning and Environmental Consultants Traffic and Transportation Specialists.
13.0 Risk Management	Company A Address Consultant(s)	Multidisciplinary Planning and Environmental Consultants
14.0 Interactions	Company A Address Consultant(s)	Multidisciplinary Planning and Environmental Consultants
15.0 Mitigation and Monitoring Measures	Company A Address Consultant(s)	Multidisciplinary Planning and Environmental Consultants

There is no description of the methodology used to produce the EIAR so it cannot be determined from the Introduction Chapter if the correct approach is taken. We would recommend something similar to the following:

An outline of the methodology employed consistently in each chapter of the EIAR to examine each environmental topic is provided below:

Table X Methodology Employed to Produce each EIAR Chapter

Introduction	Provides an overview of the specialist area and specifies the specialist who prepared the assessment.
Study Methodology	This subsection outlines the method by which the relevant impact assessment has been conducted within that chapter.
The Existing Receiving Environment (Baseline Situation)	This section will describe and assess the receiving environment, the context, character, significance and sensitivity of the baseline receiving environment into which the Proposed Development will fit. This analysis also takes account of any other proposed developments that are likely to proceed in the immediate surroundings.

Characteristics of the Proposed Development	<p>Consideration of the '<i>Characteristics of the Proposed Development</i>' allows for a projection of the '<i>level of impact</i>' on any particular aspect of the environment that could arise.</p> <p>For each chapter those characteristics of the Proposed Development which are relevant to the area of study are described; for example, the chapter on landscape and visual impact addresses issues such as height, design and impact on the surrounding landscape.</p>
Potential Impact of the Proposed Development	<p>This section provides a description of the specific, direct and indirect, effects that the Proposed Development may have. This analysis is provided with reference to both the Existing Receiving Environment and Characteristics of the Proposed Development sections, while also referring to the: (i) magnitude and intensity, (ii) integrity, (iii) duration and (iv) probability of impacts.</p> <p>The assessment addresses whether the impacts are direct, indirect, secondary or cumulative in nature. It also looks at the timescale of such impacts e.g. are they short, medium, long-term, and are they of a temporary, permanent, continuous or intermittent nature, and are they positive or negative impacts. The impact interactions are also addressed.</p>
Residual Impacts of the Proposed Development	<p>This section allows for a qualitative description of the resultant specific direct, indirect, secondary, cumulative, short, medium and long-term, temporary, permanent, continuous, or intermittent, positive and negative effects as well as impact interactions which the Proposed Development may have, assuming all mitigation measures are fully and successfully applied.</p>
Do Nothing Impact	<p>In order to provide a qualitative and equitable assessment of the Proposed Development, this section considers the Proposed Development in the context of the likely impacts upon the receiving environment should the Proposed Development not take place.</p>
Avoidance, Remedial and Mitigation Measures	<p>This section of each chapter describes the mitigation measures which are required. The requirement to describe mitigation measures is laid out in the EIA Directive, as implemented by the Planning Act and the Planning Regulations.</p> <p>Avoidance, remedial and mitigation measures describe any corrective or mitigative measures that are either practicable or reasonable, having regard to the potential impacts of the Proposed Development. This includes avoidance, reduction and remedy measures as set out in Section 4.7 of the Development Management Guidelines 2007, to reduce or eliminate any significant adverse impacts identified.</p>
Monitoring	<p>This involves a description of monitoring in a post-development phase, if required. This section addresses the effects that require monitoring, along with the methods and the agencies that are responsible for such monitoring.</p>
Reinstatement	<p>While not applicable to every aspect of the environment considered within the EIAR, certain measures may need to be proposed to ensure that in the event of the proposal being discontinued, there will be minimal impact to the environment.</p>
Interactions	<p>This section provides a description of impact interactions together with potential indirect, secondary and cumulative impacts.</p>
Difficulties Encountered in Compiling Information	<p>The EIA Directive requires that the EIAR includes '<i>details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information, and the main uncertainties involved</i>' (EIA Directive, Annex IV, Part 6). Each chapter that contains an environmental baseline and assessment contains a section outlining any difficulties encountered in compiling that chapter.</p>

Chapter 2 Background:

Section 2.1 would benefit from a drawing showing the Site Location and a further drawing of the Site Layout to illustrate the points being discussed.

The Chapter describes the background and the consideration of alternatives in a clear manner that complies with the requirements of Annex IV(2) of the amended Directive which requires *'A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.'*

Given that the proposed development will result in considerable quantities of soil and stone being generated it is suggested that this Chapter consider the Circular Economy such as:

"In response to the challenges faced regarding the sustainable use of resources linking issues such as the extraction of raw materials, the production and use of products and how we handle waste, the EU signed up to a Circular Economy Package (CE Package) in December 2015. The policy documents and legislative proposals contained in the CE Package are designed to aid the transition towards a circular economy and provide the legal framework to enable the Circular Economy.

The concept of a circular economy is one in which materials are used sustainably, where resources are conserved, and waste is managed in such a way as to promote secondary raw materials and recycling while ensuring minimal environmental and human health impacts are created through the use of products and materials.

The Circular Economy Action Plan (CE Action Plan)³ sets out the Commission's mandate for supporting the transition towards a Circular Economy in terms of production, consumption, waste management, boosting the secondary market for raw materials, innovation, investment and other 'horizontal measures' and monitoring of progress. A table of proposed actions and timelines is included in the Annex to the Circular Economy Plan.

Waste management has a central role to play in a circular economy, and as part of its overall CE Plan, the Commission committed to provide revised legislative proposals on waste including; long-term recycling targets for municipal waste and packaging waste, and to reduce landfill; provisions to promote greater use of economic instruments to encourage adherence to the Waste Hierarchy; general requirements for extended producer responsibility schemes to better fund sorting and recycling infrastructure; and simplification and harmonisation of definitions and calculation methods.

³ European Commission, Annex to the Communication Closing the loop – An EU action plan for the Circular Economy, COM (2015) 614 (CE Action Plan).

Chapter 3 Description of Development:

The EPA Guidelines state *'Notwithstanding any allowance for omission of full details of construction or other details of a proposal from the EIAR, the EIAR must contain adequate information to enable assessment of all likely significant effects. The more detailed the proposal is at the time of the consent application, the easier it will be to ensure compliance with the legislation'*.

Recital (22) of Directive 2104/52/EU requires *'...environmental impact assessments should take account of the impact of the whole project in question, including, where relevant, its subsurface and underground, during the construction, operational and, where relevant, demolition phases.'*

The following approach is recommended in the EPA Guidelines.

The typical categories for describing the physical characteristics of a project are given below.

These topics are frequently cross-referenced to drawings and illustrations:

- the site location - this is addressed adequately in Chapter 3.
- the size, design and appearance of the proposed project - this is addressed adequately in Chapter 3
- the cumulation with other proposed projects – this is not addressed in Chapter 3. It is referenced in Chapter 2 that this matter is addressed in the individual Chapters. Notwithstanding that it would be preferable to have a table summarising all of the findings, contained within Chapter 3.
- the use of natural resources - this is not addressed in Chapter 3 nor is there any reference to where it is addressed.
- the production of waste - this is not addressed in Chapter 3 nor is there any reference to where it is addressed.
- emissions and nuisances – this is not addressed
- a description of the Risk of Accidents – having regard to substances or technologies – this is not addressed.

On the basis of the above the Project Description Chapter would require some additions to conform to the recommendations of the EPA Guidelines.

Chapter 4 Population and Human Health:

The EPA Guidelines state *'In an EIAR, the assessment of impacts on population & human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in the EIAR e.g. under the environmental factors of air, water, soil etc.. The Advice Notes⁵⁹ provide further discussion of how this can be addressed. Assessment of other health & safety issues are carried out under other EU Directives, as relevant. These may include reports prepared under the Integrated Pollution Prevention and Control, Industrial Emissions, Waste Framework, Landfill, Strategic Environmental Assessment, Seveso III, Floods or Nuclear Safety Directives. In keeping with the requirement of the amended Directive, an EIAR should take account of the results of such assessments without duplicating them.'*⁴

As stated in our comments on Chapter 1 the competent expert that prepared this Chapter should be named and a brief bio provided to enable his/her credentials as a competent expert be examined.

The Chapter is well written and addresses all of the potential impacts and where appropriate proposes mitigation measures.

For ease of reference, it is recommended that the quality, significance and duration tables (see above) are repeated in each Chapter.

It is also recommended that all of the potential impacts, including their likelihood and potential impact be summarised in a table at the conclusion of the Chapter which would also include mitigation measures and residual impacts.

Chapter 5 Biodiversity:

Recital (7) of Directive 2014/52/EU states *'Over the last decade, environmental issues, such as resource efficiency and sustainability, biodiversity protection, climate change, and risks of accidents and disasters, have become more important in policy making. They should therefore also constitute important elements in assessment and decision-making processes'*.

Recital (12) of Directive 2014/52/EU *'With a view to ensuring a high level of protection of the marine environment, especially species and habitats, environmental impact assessment and screening procedures for projects in the marine environment should take into account the characteristics of those projects with particular regard to the technologies used (for example seismic surveys using active sonars)'*.

- Habitats
- Breeding/Feeding/Roosting Areas
- Routes and landscape features

⁴ Guidance on the Information to be contained in Environmental Impact Assessment Reports – EPA 2017 (Draft)

- Mammals/Birds/Fish/Invertebrates/Reptiles
- Vascular plants/bryophytes/lichens/fungi
- Population Stability
- Population Management
- Critical Resources
- Terrestrial/Aquatic/Marine
- Seasonality
- Existing Management
- Ecosystem Services
- Legal protection

Recital 14 of the amended Directive provides this context 'The effects of a project on the environment should be assessed in order to take account of concerns ... to ensure maintenance of the diversity of species and to maintain the reproductive capacity of the ecosystem as a basic resource for life. This recital is unchanged since it originally appeared in Directive 85/337/EEC.

The Chapter does not identify who the author is or provide a biography of the author to allow the planning authority to determine if he/she can be regarded as a competent expert.

A list of ecologists is provided as having carried out survey work but there is no information as to which survey was carried out by which person(s).

There is no date on the EIAR or indeed this Chapter, so it is not possible to determine how up to date the survey data is relative to the conclusions contained in the Chapter.

It is noted that the quality, significance, and duration tables (see above) are repeated in this Chapter which is positive.

In Paragraph 5.3.2 the following statement is made but no reason is given- *In this case, no potential for impacts outside the 15km buffer was identified.*

The Biodiversity Chapter does not adequately address the potential impacts on birds or smaller mammals such as hedgehog.

- Habitats - these are addressed
- Breeding/Feeding/Roosting Areas - these are not fully addressed
- Routes and landscape features - these are not fully addressed.

- Mammals/Birds/Fish/Invertebrates/Reptiles - Birds and small mammals are not addressed.
- Vascular plants/bryophytes/lichens/fungi -this is addressed
- Population Stability - this is not fully addressed
- Population Management – this is not fully addressed
- Critical Resources - this is not fully addressed.
- Terrestrial/Aquatic/Marine – this is addressed.
- Seasonality- this is largely addressed
- Existing Management - this is not addressed
- Ecosystem Services - this is not addressed
- Legal protection – this is partially addressed.

It is also recommended that all of the potential impacts, including their likelihood and potential impact be summarised in a table at the conclusion of the Chapter which would also include mitigation measures and residual impacts.

The Biodiversity Chapter states that there will be no instream works associated with the proposed works (under the heading Effects on Otter). This conflicts with chapter 7 which states *'The preparation phase, site investigation, site clearance, instream works, wash lands preparatory groundworks, road and bridge construction, and site compound set-up, will lead to exposure of bare ground and the potential for the generation of silt-laden run-off in works areas along the river bank'*. This is very significant in terms of assessing the impact of the proposed development. This conflict will need to be resolved and if there are instream works the biodiversity Chapter will require significant amendment.

The mitigation currently proposed within this chapter is inadequate. For example there is no mitigation proposed for the loss of the badger sett and to prevent water pollution in the event of design failure.

This Chapter does not address the interactions with aspects addressed in other Chapters.

Chapter 6 Land Use, Geology and Soils:

The amended Directive introduces Land as a prescribed environmental factor. Recital 9 gives context to this addition, showing that it relates to the issue of 'land take'. This change aligns the Directive with proceedings of the United Nations Conference on Sustainable Development (Rio de Janeiro, 2012) and with Commission strategy.

The Guidelines recommend that the following headings are used:

- Land (for example land take)⁵
- Soil (for example organic matter, erosion, compaction, sealing)
- Agricultural capability
- Geology
- Hydrogeology (may alternatively be placed under heading of Water)

Section 6.2 states that *'There will be a loss of approximately 59.4 ha of agricultural lands as a result of the diversion channel construction. This loss is not significant on a regional level or nationally. It is expected that this impact will constitute a Permanent Imperceptible Negative Impact'*. In order to conclude this, it is suggested that a map showing the proposed land take be included.

Under the heading of Economic Geology 6.3.3 identifies Coolturk Quarries, Coolturk, Crossmolina (ca. 8km from the study area) as having been identified as a disposal site for excavated material from the proposed channel. Nowhere in this chapter or subsequent chapters does it confirm that this facility is authorised to accept this material.

Section 6.3.6 presents the estimated volume of material to be excavated during the construction phase as 160,000 cubic metres. Section 6.3.6 also states that *'There are a number of potentially negative environmental impacts associated with the handling of excavated materials. These impacts can arise directly as a result of on-site excavation and construction activities or indirectly, due to placement of excess unsuitable materials at off-site locations.'* However, it is not stated what these impacts are.

The identification of potential impacts and proposed mitigation measures in respect of soil are deemed adequate.

Section 6.4.3.2 states that Potential impacts that may result from the improper management, storage and handling of fuels and lubricants for plant and machinery and of non-hazardous or hazardous liquid and solid wastes during the construction phase of the proposed scheme. Localised contamination of soils could result from an accident, spill or leak. These are not quantified or assessed.

This Chapter does not address the potential impact on Agriculture

This Chapter does not address the interactions with aspects addressed in other Chapters.

No Monitoring is proposed.

The Chapter does not identify who the author is or provide a biography of the author to allow the planning authority to determine if he/she can be regarded as a competent expert.

⁵ Removal of productive land from potential agricultural or other beneficial uses

For ease of reference, it is recommended that the quality, significance and duration tables (see above) are repeated in each Chapter.

It is also recommended that all of the potential impacts, including their likelihood and potential impact be summarised in a table at the conclusion of the Chapter which would also include mitigation measures and residual impacts.

Chapter 7 Water:

The Chapter does not identify who the author is or provide a biography of the author to allow the planning authority to determine if he/she can be regarded as a competent expert.

In general, the Chapter sets out the baseline conditions, the potential impacts and the proposed mitigation measures in a clear understandable manner. It is considered that this would benefit from all of the potential impacts, including their likelihood and potential impact summarised in a table at the conclusion of the Chapter which would also include mitigation measures and residual impacts.

See comment under Chapter 5 on 'instream works'

This Chapter does not address the interactions with aspects addressed in other Chapters other than a reference to Chapter 5 in 7.3.2 and a brief mention of the 160,000 cubic metres of soil to be excavated from the site.

Chapter 8 Air Quality & Climate /Noise & Vibration:

The EPA Guidelines recommend that the following are addressed under the above headings:

- Air Quality Pollutants
- Suspended Particles
- Odour
- Noise & Vibration Daytime Noise
- Night time Noise
- Vibration sources
- Sensitive receptors
- Radiation

The Chapter does not identify who the author is or provide a biography of the author to allow the planning authority to determine if he/she can be regarded as a competent expert.

The Chapter does not adequately assess the impact of dust from the proposed development on the environment. The excavation of 160,000 cubic metres of soil/clay has the potential to generate considerable dust under certain conditions. This should be modelled in order to accurately assess the potential impact. In addition, the transport of this material also has the potential to generate significant dust. Furthermore, the impact of the considerable volume of heavy traffic required for the proposed development on air quality should be assessed.

It is also recommended that all of the potential impacts, including their likelihood and potential impact be summarised in a table at the conclusion of the Chapter which would also include mitigation measures and residual impacts.

Monitoring is only dealt with in a perfunctory manner with no details provided.

This Chapter does not address the interactions with aspects addressed in other Chapters other than a reference the 160,000 cubic metres of soil to be excavated from the site.

Chapter 9 Landscape:

The Chapter does not identify who the author is or provide a biography of the author to allow the planning authority to determine if he/she can be regarded as a competent expert.

In general, this Chapter addresses Landscape and Visual in a satisfactory manner. Interactions with the subject matter of other Chapters is not addressed.

Chapter 10 Cultural Heritage:

In general, this Chapter is well written and addresses the subject matter in a satisfactory manner.

Chapter 11 Material Assets:

Material assets can now be taken to mean built services and infrastructure. Traffic is included because in effect traffic consumes roads infrastructure. Sealing of agricultural land and effects on mining or quarrying potential come under the factors of land and soils.⁶

The Chapter does not identify who the author is or provide a biography of the author to allow the planning authority to determine if he/she can be regarded as a competent expert.

The traffic assessment relies on a Traffic Survey that was carried out by Mayo National Roads Design Office in 2007. Given that this is now 2021 this information is seriously out of date and in order to validate the assumptions made in this Chapter more up to date information should be sought. (It is noted that traffic surveys carried out during Covid 19 restrictions have limitations, but traffic surveys carried out for more recent projects should be available).

The modelled traffic impact would appear not to be correct. The EIAR states '*The estimated number of round trips from site for removal of surplus material is 10,000 over the anticipated construction programme*'. It is not stated if the proposal is to use rigid or articulated trucks but assuming rigid trucks are to be employed with an average payload of 18 tonnes per trip.

Converting the 160,000m³ into tonnes gives (using a factor of between 1.5 and 2.0 tonnes/m³) will convert to between 240,000 tonnes and 320,000 tonnes. At 18 tonnes per trip this will convert to

⁶ Guidance on the Information to be contained in Environmental Impact Assessment Reports – EPA 2017 (Draft)

between 13,333 and 17,777 single trips or 26,666 to 35,554 return trips. This is considerably in excess of what is assessed in this chapter.

The assessments of the Potential Impact to the Water Distribution Network, the Gas Network, the Electricity Network and the Telecommunications Network are satisfactory.

Table 11.11 '*Estimated C&D Waste resulting from the proposed scheme*' does not have any units but it is assumed that this is in m³. There is no information provided in this Chapter to demonstrate that this waste will be disposed of/recovered in accordance with Waste Management Legislation. Chapter 6 under the heading of Economic Geology 6.3.3, identifies Coolturk Quarries, Coolturk, Crossmolina (ca. 8km from the study area) as having been identified as a disposal site for excavated material from the proposed channel. However, no information has been provided in respect of what consent this facility is operating under, what capacity and annual tonnage it can accept and that it can accept the type of material identified. Details of the permit/licence and a waste acceptance letter is required. If this facility were to become unavailable then this would have an impact on traffic and material assets.

There is not enough detail in the EIAR (either Chapter 5 or 11) concerning the impacts of Japanese Knotweed and the requirement for removal. A draft Knotweed removal plan should be included noting the location of the identified stands of this invasive plant.

The statement in Chapter 11 that '*Waste receiving facilities must also be appropriately licensed or permitted for the waste being received. Operators of such facilities cannot receive any waste, unless in possession of a waste permit granted by the Local Authority under the 'Waste Management (Facility Permit & Registration) Regulations 2007' (as*

amended) or a waste license granted by the EPA. The permit/license held will specify the type and quantity of waste able to be received, stored, sorted, recycled and/or disposed of at the specific site. The contractor shall provide details of all proposed waste facilities to the Area Engineer before works commence on site. It has been confirmed that there are appropriate facilities in the area available to receive and process waste material'. while not directly contradicting other Chapters is at variance with Chapter 6 and the traffic section of this Chapter. This needs to be clarified.

It is recommended that this Chapter take into account the Circular Economy and in particular if the soil and stone being generated can be managed as a by-product under Article 27 of European Communities (Waste Directive) Regulations 2011.

This Chapter does not address interactions, nor does it propose monitoring measures.

Chapter 12 Interactions:

The EPA Guidelines state 'The interactions between impacts on different environmental factors should be addressed as relevant throughout the EIAR. For example, where it is established in the Hydrology section that there will be an increase in suspended solids in discharged surface waters during construction, then the Biodiversity section should assess the effect of that on sensitive aquatic receptors. Close co-ordination and management within the EIA team is needed to ensure that interactions are adequately addressed throughout an EIAR.

It is general practice to include a matrix to show where interactions between effects on different factors have been addressed. This is usually done using the actual headings used in the EIAR if these differ from the factors contained in the Directive This is typically accompanied by brief text describing the interactions

The Chapter on Interactions does not adequately address the interactions. It is general practice to address these on a Chapter-by-Chapter basis and then bring it together in the Interactions Chapter. This isn't the case in this EIAR. For example there is no mention of the interaction between Soil and Geology and Waste or Traffic and Air Quality. A full matrix (see below extract from EPA Guidelines) supported by narrative should be completed to ensure that this Chapter is compliant with the Guidelines.

Interaction	Population & Human Health		Biodiversity		Land, Soils & Geology		Hydrology & Hydrogeology		Air Quality & Climate		Noise & Vibration		Landscape		Material Assets		Roads, Traffic & Transportation		Waste Management		Archaeology		Architectural Heritage	
	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.
Population & Human Health			x	x	x	x	x	x	x	x	✓	✓	✓	✓	x	x	✓	✓	x	x	x	x	x	x
Biodiversity					x	x	✓	x	x	x	✓	x	x	x	x	x	x	x	x	x	x	x	x	x
Land, Soils & Geology							✓	✓	x	x	x	x	x	✓	x	x	x	x	x	x	✓	x	x	x
Hydrology & Hydrogeology									x	x	x	x	x	x	✓	✓	x	x	x	x	x	x	x	x
Air Quality & Climate																	✓	✓	x	x	x	x	x	x
Noise & Vibration																	✓	✓	x	x	x	x	x	x
Landscape																								
Material Assets																								
Roads, Traffic & transportation																								
Waste Management																								
Archaeology																								
Architectural Heritage																								

Con.	Construction Phase	✓	Weak Interaction
Op.	Operational Phase	✓	Some Interaction
x	No Interaction	✓	Strong Interaction

Figure 3.6 Sample Matrix to show Interactions between Factors

Chapter 13 Risk:

This chapter is required to describe likely significant negative effects on the environment arising from the vulnerability of the proposed development to risks of major accidents and/or natural disasters.

The assessment of the vulnerability of the proposed development to major accidents and natural disasters is to be carried out in compliance with the EIA Directive which states the need to assess:

“the expected significant adverse effects of the project on the environment deriving from the vulnerability of the project to risks of major accidents and/or natural disasters which are relevant to the project concerned.”

The underlying objective of this assessment is to ensure that appropriate precautionary actions are taken for those projects which *“because of their vulnerability to major accidents and/or natural disasters, are likely to have significant adverse effects on the environment”*.

Based on the requirements of the EIA Directive, this chapter is required to determine:

- The relevant major accidents and/or natural disasters, if any, that the proposed development could be vulnerable to;
- The potential for these major accidents and/or natural disasters to result in likely significant adverse environmental effect(s); and
- The measures that are in place, or need to be in place, to prevent or mitigate the likely significant adverse effects of such events on the environment.

As no such Chapter has been provided the EIAR does not comply with the requirements of the Directive.

Chapter 14 Mitigation and Monitoring:

Annex IV (7) of the amended Directive requires a description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.

While a number of Chapters within the document describe such mitigation measures and proposed monitoring, not all do. While not mandatory it is standard practice to present these in a single Chapter (or two Chapters namely Mitigation and Monitoring as separate Chapters). This allows for the reader to understand at a glance the proposed mitigation measures as a whole and any monitoring that is proposed including the duration for which it is proposed. It also allows the reader to see where no monitoring is being proposed rather than the document being silent.

It is recommended that a Chapter on Mitigation and Monitoring be included in this EIAR.

Recommendations

1. The structure of the EIAR be set out in a table such as the one described (Table 1-1) on p6
2. Details of all of the competent experts should be clearly set out and which chapter each expert is responsible for writing. A table (Table 1-2 on p8) is set out as a guideline.
3. The methodology used to produce each chapter should be clearly described in the Introduction Chapter. (Table X on p 10 is provided as a guideline)
4. Provide a site location map and site layout drawing in Chapter 2.
5. Address the Circular Economy in Chapter 2.
6. Address the following in Chapter 3

- The use of natural resources
 - The production of waste
 - Emissions and nuisances
 - A description of the risk of accidents.
7. The biodiversity Chapter should address the following:
 - Breeding/feeding/roosting areas
 - Routes and Landscape features
 - Birds and small mammals
 - Population stability
 - Population management
 - Critical resources
 - Existing management
 - Ecosystem services
 - Legal Protection.
 8. Resolve the discrepancy between Chapter 5 and Chapter 7 (and the NIS) with regard to the instream works.
 9. Review the mitigation measures in Chapter 5
 10. Confirm the figure of 160,000 cubic metres of soil material to be excavated as part of the proposed works.
 11. Assess the impact of dust from the excavated material in Chapter 8.
 12. Review the Traffic Impact Assessment in view of the response to number 10 above.
 13. Provide more detail on the proposed waste management to include details of proposed facilities.
 14. Provide more detail regarding the removal of Japanese Knotweed from the site.
 15. Chapter 12 should be updated to include all interactions. See attached matrix.
 16. A Chapter on Risk should be included.
 17. A Chapter on Mitigation and Monitoring should be included.