



BALLINA FLOOD RELIEF SCHEME

Environmental Impact Assessment Report Chapter 1: Introduction

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Chapter 1: Introduction

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Glossary

Term	Meaning
Ballina Flood Relief Scheme	The subject of this EIAR. The flood relief scheme aims to manage flooding associated with the River Moy and its tributaries.
Environmental Impact Assessment	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive 2011/92/EU as amended by EIA Directive 2014/52/EU and European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018), including the publication of an Environmental Impact Assessment Report (EIAR).
The Developer	Mayo County Council (MCC)
The Proposed scheme	Ballina Flood Relief Scheme

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Acronyms

Term	Meaning
AA	Appropriate Assessment
AEP	Annual Exceedance Probability
CEnv	Chartered Environmentalist
CFRAM	Catchment Flood Risk Assessment and Management
CIEEM	Chartered Institute of Ecology and Environmental Management
CSci	Chartered Scientist
EclA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EU	European Union
FRS	Flood Relief Scheme
HIA	Health Impact Assessment
IFI	Inland Fisheries Ireland
IHT	Institute of Highways and Transport
IPH	Institute of Public Health
IPI	Irish Planning Institute
IWEA	Irish Wind Energy Association
MCC	Mayo County Council
NBS	Nature based solutions
NIS	Natura Impact Statement
NTS	Non-Technical Summary
OPW	Office of Public Works
SAC	Special Area of Conservation
SoP	Standard of Protection
SuDS	Sustainable Drainage Systems
TA	Transport Assessment
TII	Transport Infrastructure Ireland

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Units

Unit	Description
GW	Gigawatts
ha	Hectare
km	Kilometres
MW	Megawatts

1 INTRODUCTION

The Proposed Scheme will be developed along the River Moy and its tributaries in the town of Ballina, County Mayo. Ballina is located just upstream of the Moy Estuary. The reach of the Moy downstream of the Salmon Weir in Ballina is tidal. There are several tributaries of the River Moy flowing through the town including the Quignamanger Stream, Bunree Stream (known locally as the Behy Road Stream), Brusna River and Tullyegan Stream. The Proposed Scheme aims to manage flooding associated with the River Moy and these tributaries. As part of the delivery of this Proposed Scheme, an Environmental Impact Assessment Report (EIAR) has been completed.

1.1 Proposed Scheme Objectives

The aim of the Proposed Scheme is to alleviate the risk of flooding in Ballina Town to a defined Standard of Protection (SoP). RPS was appointed to identify, design and submit (for planning consent) a Flood Relief Scheme (FRS) that is technically, socially, environmentally, and economically acceptable and to procure, manage and oversee the construction of the Proposed Scheme, should planning consent be granted.

Ballina Town is a key town in terms of natural, cultural and built heritage. The River Moy and Brusna river are both protected as a Special Area of Conservation (SAC). The River Moy is also vital for angling for its salmon production. These aspects of the River Moy have been carefully considered as part of the development of the Proposed Scheme. Opportunities for the enhancement of the amenity value of the River Moy and its tributaries have also been identified, where possible.

1.2 Need for Proposed Scheme

The Office of Public Works (OPW), working in partnership with Mayo County Council (MCC) and other local authorities completed the Western Catchment Flood Risk Assessment and Management (CFRAM) Study. The study included Ballina as an Area for Further Assessment and concluded that an FRS would be viable and effective for the community.

As per OPW targets, the SoP for areas at risk of flooding within the community is 1% of the Annual Exceedance Probability (AEP) for fluvial areas and 0.5% AEP for coastal flood events.

Based on Ballina's current susceptibility to flooding in conjunction with the expected increase in future flooding, there is a strong need to develop an FRS to protect Ballina residents from serious flooding events and to preserve Ballina as an attractive town for development. Ballina has a long history associated with flooding because of the River Moy's high-water level, in conjunction with inadequate conveyance capacities of the smaller stream/channels and associated culverts. The highest observed water level recorded a height of 3.21 metres above Ordnance Datum (mOD)-Malin in 2014. Within this flood plain, a high number of receptors are currently at risk of damage. Approximately 228 residential and 69 commercial receptors are potentially affected by flooding within the River Moy catchment. Refer to **Figure 1-1** for the location of the Proposed Scheme.

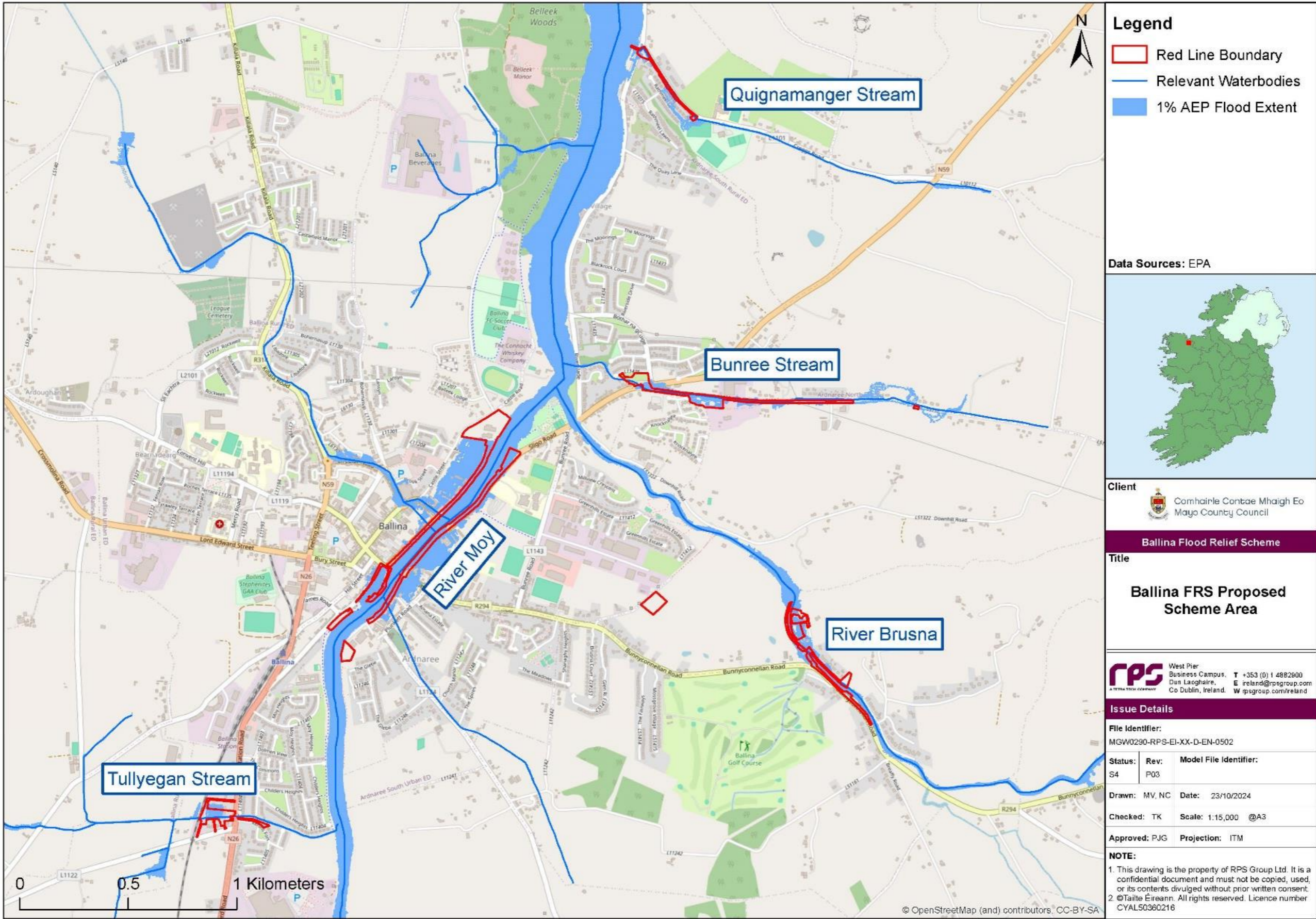


Figure 1-1: Location of the Proposed Scheme

1.3 The Applicant

MCC is the authority responsible for local government in County Mayo. As a county council, it is governed by the Local Government Act 2001 and is responsible for several sectors across the county including: housing and community, roads and transportation, urban planning and development, amenity and culture and environment. As stated above, MCC is in partnership with the OPW to deliver of the Ballina FRS.

1.4 Requirement for EIAR

The requirement of an EIA for a project was initially set out in European Union (EU) Directive (85/337/EEC) as amended by Directive 97/11/EC, 2003/35/EC and 2009/31/EC on the assessment of the effects of certain public and private projects on the environment. The amendments were codified by Directive 2011/92/EU of the European Parliament and the Council on the assessment of the effects of certain public and private projects on the environment (and as amended in turn by Directive 2014/52/EU). The Directives as amended being herein referred to as the 'EIA Directive'.

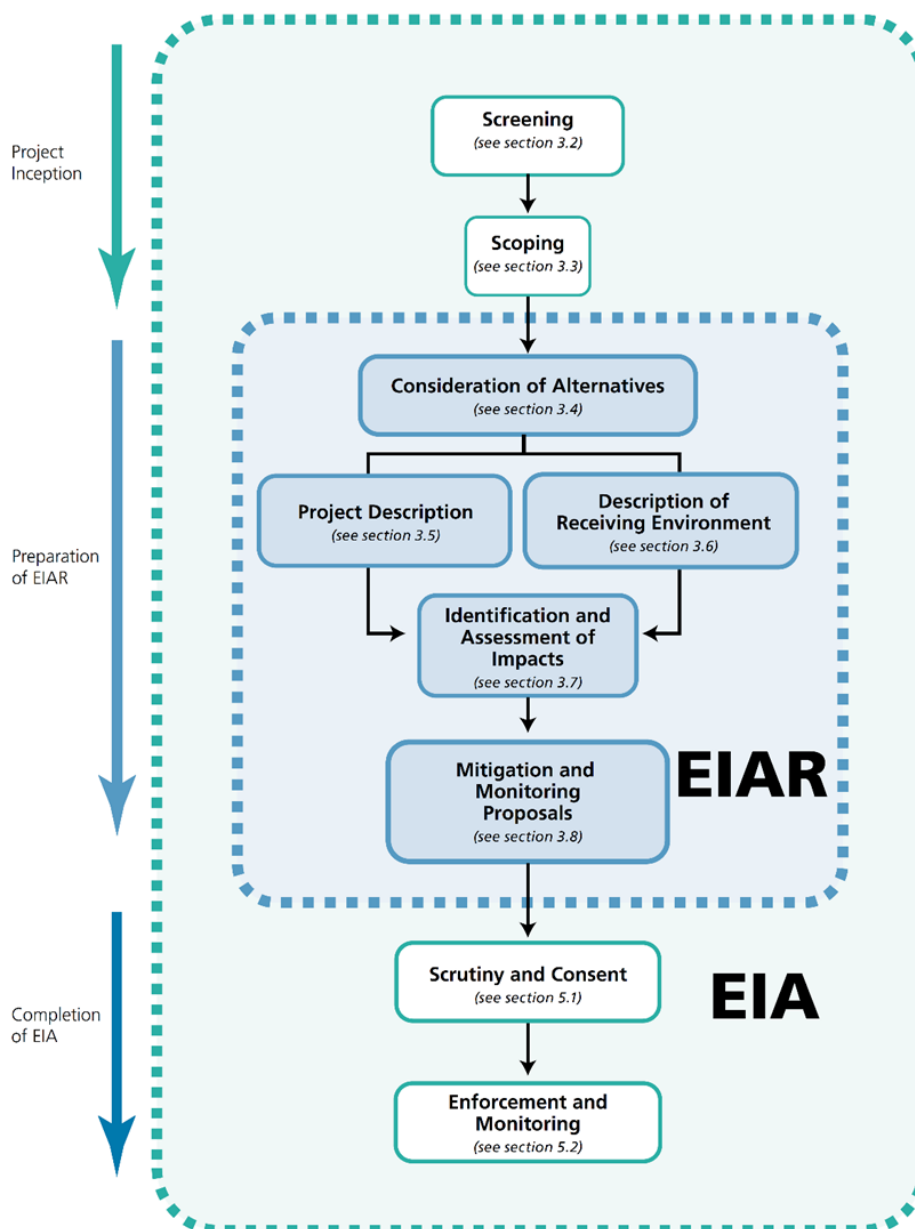
The EIA Directive requires certain developments to be assessed for likely significant effects before planning permission can be granted. An EIAR is required to be produced by the developer of a project under Articles 5(1) and 5(2), and with reference to Annex 1 and 2, of the EIA Directive and must contain the information specified in Annex IV.

The EIAR requirements of the EIA Directive are transposed into Irish Law in the Planning and Development Regulations 2001 (as amended and substituted).

1.5 EIA Process

Figure 1-2 outlines the overall EIA process and the key activities undertaken for the Proposed Scheme during project inception, preparation and completion of the EIAR (EPA, 2022).

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Source: Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022)

Figure 1-2: The EIA Process

1.5.1 Guidance

The preparation of documents associated with the EIA (EIA Screening, Scoping and EIAR) has been informed by relevant international and national EIA guidelines including the following:

- Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects, published by the Planning Inspectorate, an executive agency of the Ministry of Housing, Communities and Local Government of the United Kingdom (2019).
- Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission, 2017).
- Environmental Impact Assessment of Projects–Guidance on Scoping (Directive 2011/92/EU as amended by 2014/52/EU) (European Commission, 2017).

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- Environmental Impact Assessment of Projects-Guidance on Screening (Directive 2011/92/EU as amended by 2014/52/EU (European Commission, 2017).
- Guidelines for Planning Authorities and An Bord Pleanála on Carrying out Environmental Impact Assessment, (Department of Housing, Planning and Local Government, August 2018).
- Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (European Commission, 2017).
- Guidelines on Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022).

In addition to the applicable EIA legislation and guidance, relevant EU Directives, national legislation and guidance relating to the specialist areas have also been considered as part of the process and are addressed in each of the relevant assessment chapters contained in this EIAR.

1.5.2 Screening

The purpose of screening as set out in the European Commission’s “*Guidance on Screening*” (European Commission, 2017a) is to determine whether an EIA is required for a particular project.

The prescribed classes of development and thresholds that trigger a mandatory EIA and the provision of an EIAR are set out in Schedule 5 of the Planning and Development Regulations, 2001, as amended.

The class under Schedule 5 that is relevant to the Scheme is listed below:

- (f) (ii) *Canalisation and flood relief works, where the immediate contributing sub-catchment of the proposed works (i.e. the difference between the contributing catchments at the upper and lower extent of the works) would exceed 100 hectares or where more than 2 hectares of wetland would be affected or where the length of river channel on which works are proposed would be greater than 2 kilometres.*

The Proposed Scheme along a section of the Moy, where the difference between the contributing catchments, is approximately 107 km² (or 10,700 ha), exceeding the limit of 100 ha as outlined in Section 172 (f)(ii) of the Planning and Development Act, 2000 allowed for a FRS and channelisation. The threshold for mandatory EIA is therefore met under Section 80 (1) of the Planning and Development Regulations 2001, as amended.

1.5.3 Scoping

Scoping is an integral part of the EIA process, the aim of which is to identify matters that should be covered in the EIAR. It is defined in the Environmental Protection Agency (EPA) Guidelines (EPA, 2022) as:

“identifying the significant issues which should be addressed by a particular Impact Assessment, as well as the means or methods of carrying out the assessment”.

EIA scoping seeks to identify the aspects of the environment where there is an interaction (either direct or indirect, positive or negative), with a proposal and the potential effects, which need to be assessed. The process is dynamic, reflecting the evolution of the project design, comment from stakeholders and development of baseline information relevant to the receiving environment as a result of desktop and field surveys.

A scoping process to identify the issues that are likely to be most important during the EIA process was carried out by the applicant, design team and EIAR team and informed the format of this EIAR. An informal EIA Scoping Report was sent to environmental stakeholders in January 2023. The prescribed bodies and key stakeholders were invited to comment over a 5-week period. The submissions received have been considered as part of the preparation of this EIAR, as appropriate. The responses received have been considered in **Chapter 3: Consultation** and as part of the topic assessments of the EIAR in **Chapters 6 to 21** (see heading titled ‘Consultation’ within each chapter). The EIA Scoping Report is available on the project website (<http://www.ballinafrs.ie/>).

Taking into account the nature, size and location of the Proposed Scheme (see **Chapter 5: Project Description**), the topics outlined in **Table 1-1** have been identified as requiring consideration within this

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EIAR. The topics have been aligned to refer to the factors outlined by Article 3(1) and 3(2) of the EIA Directive and information specified under Section 80 (1) of the Planning and Development Regulations 2001, as amended.

Table 1-1: Factor to be Included in the EIAR

Information Required in the EIAR	Where Addressed in the EIAR
Article 3 EIA Directive – Environmental Factors	
1 (a): Population and human health	Chapter 7: Population Chapter 8: Human Health
1(b): Biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC	Chapter 9: Aquatic Biodiversity Chapter 10: Terrestrial Biodiversity
1(c): Land, soil, water, air and climate	Chapter 11: Land, Soil, Geology and Hydrogeology Chapter 12: Water Chapter 13: Air Quality Chapter 14: Climate Chapter 15: Noise & Vibration
1(d): Material assets, cultural heritage and the landscape	Chapter 16: Material Assets: Waste and Utilities Chapter 17: Material Assets: Land and Properties Chapter 18: Cultural Heritage Chapter 19: Landscape & Visual
1(e): The interaction between the factors referred to in points (a) to (d)	Chapter 20: Interactions & Cumulative Effects
2: The effects referred to in paragraph 1 on the factors set out therein shall include the expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned	Chapter 21: Risk of Major Accidents & Disasters Assessment
Section 80 (1) of the Planning and Development Regulations 2001, as amended	
<i>Content of EIAR 94: An EIAR shall contain – (a) the information specified in paragraph 1 of Schedule 6,</i>	
Schedule 6.1 (a) A description of the proposed development comprising information on the site, design and size of the proposed development.	Chapter 5: Project Description
Schedule 6.1 (b) A description of the measures envisaged to avoid, reduce and, if possible, remedy significant adverse effects.	Chapters 5-21 and summarised in Chapter 22: Schedule of Environmental Commitments
Schedule 6.1 (c) The date [sic: data] required to identify and assess the main effects which the proposed development is likely to have on the environment.	Chapter 5: Project Description
Schedule 6.1 (d) An outline of the main alternatives studied by the developer and an indication of the main reasons for his or her choice, taking into account the effects on the environment.	Chapter 4: Assessment of Alternatives
<i>Content of EIS 94: An EIAR shall contain – (b) any additional information specified in paragraph 2 of Schedule 6 relevant to the specific characteristics of the development or type of development concerned and to the environmental features likely to be affected, and methods of assessment,</i>	
Section 6.2 (a) (i) a description of the physical characteristics of the whole proposed development and the land-use requirements during the construction and operational phases;	Chapter 5: Project Description Chapter 17: Material Assets: Land and Properties

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Information Required in the EIAR	Where Addressed in the EIAR
Section 6.2 (a) (ii) a description of the main characteristics of the production processes, for instance, nature and quantity of the materials used;	Chapter 5: Project Description
Section 6.2 (a) (iii) 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 development;	Chapter 12: Water Chapter 13: Air Quality Chapter 15: Noise and Vibration Chapter 16: Material Assets: Waste and Utilities
Section 6.2 (b) a description of the aspects of the environment likely to be significantly affected by the proposed development, including in particular: <ul style="list-style-type: none"> – 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; 	Chapters 5-20 and summarised in Chapter 22: Schedule of Environmental Commitments
Section 6.2(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 development on the environment resulting from: <ul style="list-style-type: none"> – the existence of the proposed 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; 	Chapter 16: Material Assets: Waste and Utilities
Section 6.2 (d) an indication of any difficulties (technical deficiencies or lack of know-how) encountered by the developer in compiling the required information.	Provided in Chapters 5-21 .
<i>Content of EIAR 94. An EIAR shall contain – (c) a summary in non-technical language of the information required under paragraphs (a) and (b).</i>	
(c) a summary in non-technical language of the information required under paragraphs (a) and (b).	Volume A: Non-Technical Summary (NTS)
<i>Content of EIAR 94. An EIAR shall contain – (d) a reference list detailing the sources used for the descriptions and assessments included in the report,</i>	
<i>Reference list detailing the sources used for the descriptions and assessments.</i>	Provided in a reference table at the end of every chapter.
<i>Content of EIAR 94. An EIAR shall contain – (e) a list of the experts who contributed to the preparation of the report, identifying for each such expert-</i>	
<i>(i) the part or parts of the report which he or she is responsible for or to which he or she contributed,</i>	Provided in Section 1.7, Table 1-2 .
<i>(ii) his or her competence and experience, including relevant qualifications, if any, in relation to such parts, and</i>	Provided in Section 1.8: Study Team .
<i>(iii) such additional information in relation to his or her expertise that the person or persons preparing the EIAR consider demonstrates the expert's competence in the preparation of the report and ensures its completeness and quality.</i>	Provided in Section 1.8: Study Team .

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1.5.4 EIAR

Broadly speaking, the EIA process involves several steps which includes the production of an EIAR, although this is not the end but rather an output to assist in a wider decision-making framework. The EPA define EIA (EPA, 2022) as:

“The process of examining the anticipated environmental effects of proposed project - from consideration of environmental aspects at design stage, through consultation and preparation of an EIAR, evaluation of the EIAR by a competent authority, the subsequent decision as to whether the project should be permitted to proceed, encompassing public response to that decision”.

An EIAR is a statement prepared by the developer, providing information on the significant effects on the environment based on current knowledge and methods of assessment. It is carried out by competent experts, with appropriate expertise to provide informed assessment on the environmental factors as required under the EIA Directive. The EIAR consists of a systematic analysis and assessment of the potential effects of a Proposed Scheme on the receiving environment. The EIAR specifically:

- Provides statutory and non-statutory consultees with technical information to enable an understanding of the Proposed Scheme.
- Provides a description of the reasonable alternatives considered for the Proposed Scheme and an indication of the main reasons for the options selected including taking into account the effects of the Proposed Scheme on the environment.
- Presents the existing environmental baseline information established from desktop studies, site-specific surveys and/ or consultation.
- Indicates any limitations encountered during the compilation of the environmental information, including the acknowledgement of any data gaps or deficiencies and confidence in the information gathered.
- Describes the methodology used within the EIA process.
- Presents the potential environmental effects arising from the Proposed Scheme. This will be based on the baseline information coupled with the analysis and impact assessments completed.
- Proposes mitigation measures to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment. Where mitigation measures have been identified, the residual significance of effects has also been identified.

1.6 Limitations

Limitations within the EIA process for the Proposed Scheme includes the following:

- Ballina Town is in the process of drafting a public realm strategy and the Ballina Town Public Realm Works are likely to overlap the Ballina FRS area of works. The flood relief measures along Cathedral Road have incorporated feedback from the MCC architectural team to facilitate the development of the Ballina Town Public Realm Works at a later date. However, the EIAR has limited ability to consider incorporation within other sections of the FRS, such as Ridgpool Road and Bachelors Walk due to the public realm works early stage of design and development.
- Aquatic archaeology surveys were carried out on the River Moy; however, survey accessibility was limited due to the high and fast flows present in the channel. In consultation with the Inland Fisheries and agreed with the National Monuments Service (NMS), an abridged survey area was selected to avoid areas too dangerous to survey.

1.7 Structure of the EIAR

The EIAR is divided into three volumes:

- **Volume A:** NTS
- **Volume B:** EIAR Main Body

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- **Volume C:** Technical Appendices
- **Volume D:** Appropriate Assessment (AA)

Table 1-2 provides a breakdown of the contents of the EIA volumes and the organisations that have contributed to the EIA. The EIA is supported by a Construction Environment Management Plan (CEMP). The list of the EIA contributors outlining their competence and experience, including relevant qualifications is provided in **Table 1-3**.

Table 1-2: EIA Structure, Content, and Contributors

Volume	Ref.	Chapter/Report	Competent expert
Volume A EIA NTS	-	NTS	PJ Griffin
Volume B EIA Main Body	1	Introduction	PJ Griffin
	2	Planning & Policy	Michael Higgins
	3	Consultation	PJ Griffin
	4	Assessment of Alternatives	PJ Griffin
	5	Project Description	PJ Griffin
	6	Traffic and Transportation	Padraic Culkín
	7	Population	Michael Higgins
	8	Human Health	Ryngan Pyper
	9	Aquatic Biodiversity	Lauren Williams
	10	Terrestrial Biodiversity	Robert Rowlands
	11	Land, Soil, Geology and Hydrogeology	Noreta Daly
	12	Water	Uzzal Mandal
	13	Air Quality	Ciara Nolan
	14	Climate	Ciara Nolan
	15	Noise & Vibration	John Mahon
	16	Material Assets: Waste and Utilities	PJ Griffin
	17	Material Assets: Land and Properties	Michael Higgins
	18	Cultural Heritage	Kate Robb (Terrestrial) Juliana O'Donoghue (Aquatic)
	19	Landscape & Visual	Joanna Mole
	20	Interactions & Cumulative Effects	PJ Griffin
	21	Risks of Major Accidents or Disasters	PJ Griffin
	22	Schedule of Environmental Commitments	PJ Griffin
Volume C Technical Appendices	3	Consultation	PJ Griffin
	6	Traffic & Transportation	Padraic Culkín
	9	Aquatic Biodiversity	Lauren Williams
	10	Terrestrial Biodiversity	Rob Rowlands
	11	Land, Soil & Hydrogeology	Noreta Daly
	12	Water	Uzzal Mandal
	13	Air Quality	Ciara Nolan
	14	Climate	Ciara Nolan
	15	Noise and Vibration	John Mahon
	16	Material Assets: Waste/ Utilities	PJ Griffin
	18	Cultural Heritage	Kate Robb (Terrestrial) Juliana O'Donoghue (Aquatic)
19	Landscape and Visual	Joanna Mole	

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Volume	Ref.	Chapter/Report	Competent expert
	20	Interactions and Cumulative Effects	PJ Griffin
Volume D		Natura Impact Statement (NIS)	Rob Rowlands

1.8 Study Team

Table 1-3: Qualifications and Experience of EIAR Competent Experts

Expert	Qualifications	Relevant Experience
RPS: PJ Griffin	B.E. (Hons) in Civil Engineering Postgraduate Diploma (Level 9) in Management (IMI)	Patrick (PJ) is a Chartered Engineer and Certified Project Management Professional. He has extensive experience in a wide range of water & wastewater, flooding, environmental and structural projects. He has completed preliminary and detailed design of surface water collection systems including the implementation of Sustainable Drainage Systems (SuDs) techniques as well as several flood studies and outline and detailed design for Flood Alleviation Schemes. PJ has acted as project manager on several FRSS including Clare River Flood Relief and Athlone Flood Alleviation Schemes. PJ has completed hydrological impact and flood risk assessments for raised bogs, pipelines, road schemes and private developments. He also has broad experience in water and wastewater treatment plant upgrades, pumping station and collection and distribution systems design and construction. PJ has also prepared public consultation documentation and Part 8 planning applications for water and FRSS and has given evidence at An Bord Pleanála oral hearings.
RPS: Padraic Culkin	BSc (Hons) Construction Project Management National Diploma in Civil Engineering National Certificate in Civil Engineering	Padraic is a Chartered Engineer working in the transport and asset management section of RPS. He has 21 years' experience in civil and structural engineering consultancies and has worked on a range of civil and transportation projects through various stages including preliminary design, detailed design, procurement, construction and contract administration. He has recently worked on the project management, design, procurement and site supervision of vehicle restraint systems for Transport Infrastructure Ireland (TII) and has experience in design and auditing of temporary traffic management on national roads and has also worked on the design and site supervision of traffic sign projects for several local authorities.

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Expert	Qualifications	Relevant Experience
RPS: Michael Higgins	BA (Hons), MSc, HDip, MIPI, CIHT	Michael Higgins is an experienced transport and urban planner with over 12 years' experience. He holds a BA in Economics and English, an MSc in Regional and Urban Planning and a HDip in Education. He is a corporate member of the Irish Planning Institute (IPI) and a member of the Institute of Highways and Transport (IHT). He has worked on a diverse portfolio of land use, transportation and development projects in both the public and private sectors in Ireland and the UK and has experience in the areas of planning, transport, Land Use Assessment, Mobility Management Plans, EIARs and Site Development Appraisals.
RPS: Ryngan Pyper	BA & MA (Hons) Biological Sciences, PGDip (distinction) Public Health, GDip Law, PGDip (distinction) Legal Practice	Ryngan is the Director of Health and Social Impact at RPS. Ryngan has over 15 years' experience as a professional consultant and works across the fields of public health, environmental science and impact assessment. Ryngan provides health input into EIA for major infrastructure schemes including road transport. He also advises Government and professional bodies on good practice. Ryngan has advised the World Health Organization on addressing health in EIA and in 2021 was involved in the updated Health Impact Assessment (HIA) Guidance for Ireland and Northern Ireland for the Institute of Public Health (IPH), incorporating the most recent developments and best practice in the field. Ryngan is the current chair of the health section of the International Association for Impact Assessment.
Ecology Ireland Wildlife Consultants Ltd: Lauren Williams	MCIEEM; BSc, PGDip, Certificate in Environmental Law.	Lauren Williams is a qualified freshwater ecologist with over 20 years professional consultancy experience working in Ireland and New Zealand. Lauren holds a BSc in Zoology, a Certificate in Environmental Law and a Post Graduate Diploma in Environmental Monitoring Assessment and Engineering. She is a full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Lauren specialises in water quality assessment, monitoring, aquatic ecological impact assessment (EclA) and protected aquatic species and habitat surveys; regularly undertaking specialised aquatic field studies and conducting EclA and EIAR reporting, plus AA Screening/ NIS in relation to a wide range of infrastructural developments. She also carries out aquatic sampling, monitoring and reporting as part of

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Expert	Qualifications	Relevant Experience
RPS: Dr Robert Rowlands	BSc (Hons) PhD MCIEEM CEnv	national river monitoring and research programmes. Dr Rob Rowlands is a Technical Director in RPS with over 20 years' experience. He is an experienced multi-disciplinary project manager; in particular, advising on strategy with respect to ecology, landscape, heritage/archaeology and arboriculture. He is an experienced ecologist. His ecological experience has included the completion of EclAs (including for EIA) and AAs with respect to the Habitats and Birds Directive.
RPS: Noreta Daly	BSc (Hons) Earth Science, MSc Applied Environmental Geology, Certified associate in project management, PMI (2011)	Noreta has 11 years' experience in hydrogeology / environment and six years' experience working as a hydrogeologist with RPS, specialising in geological and hydrogeological aspects of water supply schemes, transport, waste, contaminated land and commercial/ industrial projects as well as groundwater resource development. She is experienced in the delivery and coordination of environmental programs for groundwater protection, environmental risk assessment, EIA, Environmental Monitoring Programmes as well as project management for Irish Water's Treated Water Storage programme.
RPS: Dr Uzzal Mandal	BSc, PhD, CEng, MSc, MIEI, MIAHS	Dr Uzzal Mandal is an Associate in RPS with over 31 years' experience in hydrology, flood risk assessment, hydraulic modelling and detailed design of flood relief and highway drainage works in both Ireland and outside of Ireland. He has carried out hydrological impact assessments and detailed designs of the hydrological and hydraulic aspects of several major road and gas field development projects. He has carried out flood risk assessments for several major commercial and residential developments.
AWN Consulting: Ciara Nolan	BSc (Energy Systems Engineering) MSc (Environmental Science)	Ciara Nolan is a senior environmental consultant in the air quality and climate section of AWN Consulting Ltd. She holds an MSc. (First Class) in Environmental Science from University College Dublin and has also completed a BSc. Eng. in Energy Systems Engineering. She is a Member of both the Institute of Air Quality Management (MIAQM) and the Institution of Environmental Science (MIEnvSc). She has over 7 years of experience in undertaking air quality and climate assessments. She has prepared air quality and climate impact

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Expert	Qualifications	Relevant Experience
RPS: John Mahon	PhD Acoustics and Vibration, BA BAI (Hons) Mechanical Engineering,	assessments as part of EIARs for numerous developments including residential, industrial, commercial, pharmaceutical and data centre. John Mahon has 19 years' experience in environmental projects including planning applications and EIAs for a wide range of strategic infrastructure projects. He is a Chartered engineer with Engineers Ireland where his primary experience is in environmental noise. He has contributed to Irish Wind Energy Association (IWEA) planning group and provide expertise on the area of wind turbine noise. John also sits on the Irish and European Committees for Standardization CEN/TC226/WG 6 (Road traffic noise reducing devices).
Mizen Archaeology: Juliana O'Donoghue	BA Archaeology	Julianna O'Donoghue is the Director of Mizen Archaeology, where she is underwater archaeologist licensed by the National Monuments Service. As a fully qualified commercial diver she undertakes specialist underwater archaeological services with 20 years' experience in intertidal surveys, underwater assessments, archaeological monitoring of dredging works and underwater excavation. She has extensive experience in all aspects of archaeological projects from the initial planning stage to Environmental Impact Statement (EIS), monitoring, testing, excavation and report publication, many of which relate to FRSS.
John Cronin and Associates: Kate Robb	BA (Hons) Archaeology & English, MA (Hons) Archaeology, PG Dip EIA/SEA Management, Full Member of Institute of Archaeologists of Ireland (MAI).	Kate Robb is a Cultural Heritage consultant and has 15 years' experience in the assessment and management of the effects on the cultural heritage resource for a wide range of large-scale infrastructural projects. Her work includes the co-ordination and preparation of Cultural Heritage chapters for EIARs for both public and private clients. She also acts as Community Archaeologist on the Farming Rathcroghan EIP-Agri Project (2019-present) and on behalf of Donegal County Council (2022-present). Kate currently sits on the Community Engagement & Outreach working group led by Queens University Belfast, as part of the delivery of NI strategic objectives of Archaeology 2030.

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Expert	Qualifications	Relevant Experience
RPS: Joanna Mole	MSc Renewable Energy Systems Technology, 3rd level courses: Heat Transfer (Distinction) and Mechanical Engineering; 2nd level course in Renewable Energy (Distinction). Post-Graduate Diploma in Landscape Architecture, BSc in Landscape Design and Plant Science	Joanna is a chartered landscape architect with over 20 years' experience of working internationally in various fields of landscape architecture. In landscape design she has worked on public parks, playgrounds as well as large infrastructure projects such as greenways, many of which were seen through to completion with Joanna being instrumental at each stage. In recent years, she has gained in depth knowledge in Landscape and Visual Impact Assessment on large scale projects in renewable energy, the extractive industry and housing, which in many cases also required landscape character assessments, landscape mitigation strategies or restoration plans. Landscape Capacity Studies, preliminary studies to assess the landscape's capacity to absorb certain developments, are also part of Joanna's skill set. Her master's degree in Renewable Energy Systems Technology gives her an additional depth of understanding to her extensive experience in landscape and visual impact assessment.

1.9 Viewing and purchasing the EIAR

Copies of this EIAR including the Non-Technical Summary will be available online on the Planning Section of An Bord Pleanála website, under the relevant Planning Reference Number (to be assigned on lodgement of the application). An Bord Pleanála: <http://www.pleanala.ie/>.

This EIAR and all associated documentation will also be available for viewing at the offices of An Bord Pleanála and Mayo County Council. The EIAR may be inspected free of charge or purchased by any member of the public during normal office hours at the following addresses:

An Bord Pleanála,
64 Marlborough Street,
St. Rotunda,
Dublin 1.

Mayo County Council,
Áras an Chontae,
The Mall,
Castlebar,
Co. Mayo.
F23 WF90

Ballina Town Council
Arran Place,
Ballina Civic Offices,
Ballina,
Co. Mayo.
F26 E5D7

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The EIAR will also be available to view online via the Department of Planning, Housing and Local Government's EIA Portal, which will provide a link to the planning authority's website on which the application details are contained. This EIA Portal was recently set up by the Department as an electronic notification to the public of requests for development consent which are accompanied by an EIAR. (<https://www.housing.gov.ie/planning/environmental-assessment/environmental-impact-assessment-eia/eia-portal>).

The EIAR will also be available to view online on its dedicated project website: (<http://www.ballinafrs.ie/>).

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1.10 Chapter References

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European Commission , 2017b. *Environmental Impact Assessment of Projects - Guidance on Scoping (Directive 2011/92/EU as amended by 2014/52/EU)*, s.l.: s.n.

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