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1 Introduction

1.1 Introduction

Galway County Council on behalf of itself and on behalf of Galway City Council is proposing to develop the N6 Galway City Ring Road (GCRR) around Galway City.

GCC has made a Protected Road Scheme and a Motorway Scheme which are being submitted for approval to An Bord Pleanála (ABP) under Section 49 of the Roads Act 1993, as amended and these Schemes are referred to throughout this report as the proposed road development or the N6 GCRR.

The proposed N6 GCRR, comprises the construction of approximately 6km of a single carriageway from the western side of Bearna Village as far as Ballymoneen Road and approximately 12km of dual carriageway from Ballymoneen Road to the eastern tie-in with the existing N6 at Coolagh, Briarhill, and associated link roads, side roads, junctions and structures, as shown on **Figure 5.1.01 to 5.1.15**. The section of the proposed road development from the tie-in with the R336 Coast Road to the N59 Letteragh Junction will be a protected road¹ and the section from this junction to the tie-in with the existing N6 at Coolagh, Briarhill will be a motorway. A full description of the proposed N6 GCRR is provided in **Chapter 5, Description of Proposed Road Development**. A location plan for the proposed N6 GCRR is presented in **Figure 1.1**.

Galway County Council is progressing the proposed N6 GCRR through the statutory process on behalf of itself and Galway City Council under a Section 85 Agreement².

The N6 GCRR forms part of, and is identified as a project within the ‘Galway Transport Strategy’ (GTS). The GTS was prepared by Galway City Council and GCC, in partnership with the National Transport Authority (NTA). The GTS is based on a comprehensive assessment of transport issues facing Galway City and the wider environs and the need to develop a sustainable integrated transport solution to accommodate existing and future travel demand thereby facilitating Galway growing “*in an integrated, sustainable manner that aligns transport investment with settlement patterns, travel movements and also supports a sustainable use of land*” (Galway City Council Development Plan 2017-2023).

The GTS is currently being implemented by Galway City Council, both in terms of the policy objectives established and the delivery of transport projects

¹ A protected road, means a public road or proposed public road specified to be a protected road in a protected road scheme approved by An Bord Pleanála. A protected road scheme approved by An Bord Pleanála may provide for the prohibition, closure, stopping up, removal, alteration, diversion or restriction of any specified or all means of direct access to the protected road from specified land or from specified land used for a specified purpose or to such land from the protected road.

² A Section 85 Agreement has been entered into under the provisions of Section 85 of the Local Government Act 2001 between Galway County Council and Galway City Council and approved by Transport Infrastructure Ireland pursuant to Section 14 of the Roads Act 1993, as amended.

identified within the strategy. Further details on the GTS are available on Galway City Council's website at the link below:

<https://www.galwaycity.ie/galway-transport-strategy>

This Environmental Impact Assessment Report (EIAR) is defined as “a statement of the effects, if any, which the proposed development, if carried out, would have on the environment” (EPA, 2017). This EIAR details the consideration of alternatives, consideration and assessment of likely significant effects/impacts, mitigation and avoidance measures to reduce significant adverse effects/impacts, and assessment of residual impacts.

This chapter outlines the background to the proposed N6 GCRR and summarises the application procedure for submission of an application for the N6 GCRR. This chapter also describes the methodology used to prepare this EIAR (formerly referred to as an Environmental Impact Statement (EIS)) and the consultation process that has been carried out to date.

1.2 Environmental Impact Assessment Report - Screening, Scoping, Contents and Methodology

1.2.1 Statutory Requirements

This EIAR (formerly referred to as an EIS) has been prepared in accordance with the relevant provisions of Directive 2011/92/EU³ on the Assessment of the Effects of Certain Public and Private Projects on the Environment as amended by Directive 2014/52/EU⁴. Directive 2014/52/EU amends EIA law in a number of respects by amending Directive 2011/92/EU.

Article 5 and Annex IV to the EIA Directive 2011/52/EU, (as substituted by Directive 2014/52/EU) and Sections 50(2) and 50(3) of the Roads Act 1993, as amended, specify the information to be contained in an EIAR (referred to as an Environmental Impact Statement (EIS) in Roads Act 1993, as amended) in relation to this proposed road development.

Directive 2014/52/EU was required to be transposed by 16 May 2017 and requires changes in Irish laws, regulations and administrative provisions across a number of legislative codes to reflect the contents of Directive 2014/52/EU. At the time of publication of this EIAR, the changes in Irish laws, regulations and administrative provisions across a number of legislative codes (including the Roads Act 1993 as amended and Road Regulations 1994 as amended) have not yet been implemented. However, this EIAR has been prepared in full accordance and compliance with the provisions of Directive 2014/52/EU. Regard has also been had to the current provisions of the relative Irish legislative codes including the Roads Act 1993 as amended as they continue to apply at this time.

³ Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (codification).

⁴ Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.

Accordingly, this EIAR contains all of the information prescribed by the relevant provisions of the Roads Act, 1993 as amended, the Roads Regulations, 1994 as amended, Article 5 and Annex IV of Directive 2011/92/EU as amended.

Throughout this document, where reference is made to ‘environmental impact statement’, or ‘EIS’, it should also be understood to mean ‘EIAR’. Likewise, where reference is made to ‘EIAR’, it should be understood to mean ‘environmental impact statement’ or ‘EIS’.

1.2.2 EIA Screening

The proposed road development exceeds the thresholds set for mandatory Environmental Impact Assessment as specified in Irish legislation. The relevant legislation includes the Roads Act, 1993, as amended and the Roads Regulations, 1994, as amended.

Section 50 (1) (a) of Roads Act, 1993, as amended states the following:

“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....”*

Article 8 of the Roads Regulations, 1994 (*Road development prescribed for the purposes of S. 50(1) (a) of the Roads Act, 1993*) lists the prescribed types of proposed road development which require an EIS (EIAR) as follows:

“8. The prescribed types of proposed road development for the purpose of subsection (1) (a) (iii) of section 50 of the Act shall be—

(a) 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;

(b) the construction of a new bridge or tunnel which would be 100 metres or more in length”.....

The proposed road development will include approximately 11.9km of dual carriageway and will include a bridge and a viaduct plus two tunnels each of which will be more than 100 metres in length. In addition, the section of the proposed road development from the N59 Letteragh Junction to the tie-in with the existing N6 at Coolagh, Briarhill will be a motorway. Accordingly, the Roads Authority must prepare an EIS (now referred to as an EIAR) for the proposed road development.

Section 2 of the Planning and Development Act 2000, as amended, as inserted by Section 6(c) of the Planning and Development (Strategic Infrastructure) Act, 2006, as amended, defines strategic infrastructure to include all national road development proposals for which an EIS (EIAR) is required. Therefore, all such strategic infrastructure development is dealt with by the Strategic Infrastructure Division of An Bord Pleanála.

1.2.3 Contents of EIAR

This EIAR has been prepared in accordance with the relevant provisions of Directives 2011/92/EU Assessment of the Effects of Certain Public and Private Projects on the Environment as amended by Directive 2014/52/EU and in accordance with the relevant provisions of the Roads Act, 1993, as amended, the Roads Regulation 1993 as amended, Article 5 and Annex IV of Directive 2011/92/EU, as amended.

Article 5 and Annex IV to the EIA Directive 2011/52/EU, (as substituted by Directive 2014/52/EU)⁵, and Sections 50(2) and 50(3) of the Roads Act 1993, as amended, specify the information to be contained in an EIAR in relation to this proposed road development.

As discussed previously in **Section 1.2.1**, at the time of publication of this EIAR, the changes in Irish laws, regulations and administrative provisions across a number of legislative codes had not yet been completed in relation to Directive 2014/52/EU. At the time of publication of this EIAR, there are some additional information requirements listed in Article 5 and Annex IV of the EIA Directive, as amended which are currently not listed in Sections 50(2) and 50(3) of the Roads Act 1993, as amended. For example, the Roads Act 1993, as amended, currently refers to an EIS whereas Directive 2014/52/EU now refers to an EIAR.

This EIAR contains all of the information prescribed by the relevant provisions of the Roads Act, 1993 as amended, the Roads Regulations, 1994 as amended and Article 5 and Annex IV of Directive 2011/92/EU as amended by Directive 2014/52/EU.

For clarity on the information to be contained in the EIAR, the relevant sections of the legislation are reproduced below.

Annex IV of the EIA Directive, as amended, specifies the information to be contained in an EIAR and is reproduced in **Table 1.1** below. The information provided in this EIAR meets the requirements for Article 5 and Annex IV to the EIA Directive, as amended.

⁵ Annex IV of Directive 2011/92/EU has been replaced in Directive 2014/52/EU

Table 1.1: Annex IV of EIA Directive as amended by Directive 2014/52/EU

ANNEX IV - INFORMATION REFERRED TO IN ARTICLE 5(1) (INFORMATION FOR THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT)
<p><i>1. Description of the project, including in particular:</i></p> <p><i>(a) a description of the location of the project;</i></p> <p><i>(b) a description of the physical characteristics of the whole project, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases;</i></p> <p><i>(c) a description of the main characteristics of the operational phase of the project (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used;</i></p> <p><i>(d) an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation) and quantities and types of waste produced during the construction and operation phases.</i></p>
<p><i>2. 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.</i></p>
<p><i>3. A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.</i></p>
<p><i>4. 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.</i></p>
<p><i>5. A description of the likely significant effects of the project on the environment resulting from, inter alia:</i></p> <p><i>(a) the construction and existence of the project, including, where relevant, demolition works;</i></p> <p><i>(b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;</i></p> <p><i>(c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;</i></p> <p><i>(d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);</i></p> <p><i>(e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;</i></p> <p><i>(f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;</i></p> <p><i>(g) the technologies and the substances used.</i></p> <p><i>The description of the likely significant effects on the factors specified in Article 3(1) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the project. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project.</i></p>
<p><i>6. A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical</i></p>

ANNEX IV - INFORMATION REFERRED TO IN ARTICLE 5(1) (INFORMATION FOR THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT)
<i>deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.</i>
<i>7. 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.</i>
<i>8. A description of 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 disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to Union legislation such as Directive 2012/18/EU of the European Parliament and of the Council (*)⁶ or Council Directive 2009/71/Euratom (**)⁷ or relevant assessments carried out pursuant to national legislation may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.</i>
<i>9. A non-technical summary of the information provided under points 1 to 8.</i>
<i>10. A reference list detailing the sources used for the descriptions and assessments included in the report.</i>

Sections 50(2) and 50(3) of the Roads Act 1993, as amended, specify the information to be contained in an EIS now referred to as an EIAR. Sections 50(2) and 50(3) of the Roads Act 1993, as amended, are reproduced in **Table 1.2** below. The information provided in this EIAR meets the requirements of Sections 50(2) and 50(3) of the Roads Act 1993, as amended.

Table 1.2: Sections 50(2) and 50(3) of the Roads Act 1993, as amended

SECTIONS 50(2) AND 50(3) OF THE ROADS ACT, 1993, AS AMENDED
<i>“50 (2) An environmental impact statement shall contain the following specified information—</i> <i>(a) a description of the proposed road development comprising information on the site, design and size of the proposed road development;</i> <i>(b) a description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects;</i> <i>(c) the data required to identify and assess the main effects which the proposed road development is likely to have on the environment;</i> <i>(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;</i> <i>(e) a summary in non-technical language of the above information.</i>

⁶ (*) Directive 2012/18/EU of the European Parliament and the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC (OJ L 197, 24.7.2012, p. 1).

⁷ (**) Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations (OJ L 172, 2.7.2009, p. 18).

SECTIONS 50(2) AND 50(3) OF THE ROADS ACT, 1993, AS AMENDED

50(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;

(e) 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.”;

1.2.4 Structure of EIAR

This EIAR has been prepared by Arup comprising their team of in-house competent experts and external competent experts on behalf of TII, Galway County Council and Galway City Council. Refer to the List of Contributors for further details on the competent experts. Input has also been provided to the EIAR, where necessary from TII, Galway County Council and Galway City Council.

The EIAR comprises four volumes of which this is the second. The four are as follows:

- Volume 1 – Non-Technical Summary
- Volume 2 – Environmental Impact Assessment Report (Main Text)
- Volume 3 – Figures
- Volume 4 – Appendices

The main text of the EIAR has been further divided into the following chapters:

- Chapter 1 – *Introduction*
- Chapter 2 – *Planning and Policy Context*
- Chapter 3 – *Need for the Proposed Road Development*
- Chapter 4 – *Alternatives Considered*
- Chapter 5 – *Description of the Proposed Road Development*
- Chapter 6 – *Traffic Assessment and Route Cross-Section*
- Chapter 7 – *Construction Activities*
- Chapter 8 – *Biodiversity*
- Chapter 9 – *Soils and Geology*
- Chapter 10 – *Hydrogeology*
- Chapter 11 – *Hydrology*
- Chapter 12 – *Landscape and Visual*
- Chapter 13 – *Archaeology, Architectural and Cultural Heritage*
- Chapter 14 – *Material Assets Agriculture*
- Chapter 15 – *Material Assets Non-Agriculture*
- Chapter 16 – *Air Quality and Climate*
- Chapter 17 – *Noise and Vibration*
- Chapter 18 – *Human Beings, Population and Human Health*
- Chapter 19 – *Major Accidents, Inter-relationships, Interactions and Cumulative Impacts*
- Chapter 20 – *Summary of Residual Impacts and Mitigation Measures*
- Chapter 21 – *Schedule of Environmental Commitments*

The format which has been used in this EIAR is the grouped format, in which each topic is addressed in a separate section. This is designed to allow readers to access the issues of interest to them as easily as possible. However, there is an overlap of some topics. For example, effects on human beings are addressed in a number of chapters including **Chapter 12, Landscape & Visual, Chapter 15, Material Assets Non-Agriculture, Chapter 16, Air Quality and Climate, and Chapter 17, Noise and Vibration**, as well as **Chapter 18, Human Beings, Population and Human Health**. Effects on land are addressed in a number of chapters including: **Chapter 14, Material Assets Agriculture, Chapter 15, Material Assets Non-Agriculture, Chapter 12, Landscape & Visual**, as well as **Chapter 18, Human Beings, Population and Human Health**. It should be noted that the term effects and impacts are used interchangeably in this EIAR to mean the same thing.

Significant effects on environmental topics arising from the vulnerability of the proposed road development to risks of major accidents and/or disasters are addressed in **Chapter 19, Major Accidents, Inter-Relationships, Interactions and Cumulative Impacts**.

Issues not directly addressed in individual chapters and interactions between environmental issues will be described in **Chapter 19, Major Accidents, Inter-Relationships, Interactions and Cumulative Impacts**. Alternatives considered and a description of the proposed road development are presented in **Chapters 4, and 5** respectively.

As noted in **Section 1.1**, the N6 GCRR forms part of, and is identified as a project within the ‘Galway Transport Strategy’ (GTS). However, the implementation of the proposed road development is not reliant on the delivery of other components of the GTS. It is a stand-alone development. Therefore, the EIA process for the proposed road development is a stand-alone process. However, the implementation of some objectives of the GTS are reliant on the delivery of the proposed road development. Therefore, where relevant the cumulative impacts of other proposals within the GTS have been included in this EIAR.

In addition, a Natura Impact Statement has been submitted with the application to An Bord Pleanála for approval so as to inform the Appropriate Assessment (AA) process and to assist An Bord Pleanála in carrying out the AA required pursuant to the Planning and Development Act, 2000 (as amended) and the Habitats Directive.

1.2.5 Details of Competent Experts

This EIAR has been compiled by Arup on behalf of GCC with assessment and reporting provided by competent experts for each individual topic. The main author and details of the expertise of each competent expert are provided below in **Table 1.3**.

Table 1.3: Details of Competent Experts

Topic	Main Author – Competency Details
Chapter 1 Introduction	<p>Eileen McCarthy BE (Hons) MIEI CEng, MICE CEng, PE (USA), Arup</p> <p>Eileen McCarthy is an Associate Director with Arup. She holds an honours degree in Civil Engineering from University College Cork and is a Chartered member of the Institute of Civil Engineers in London, a Chartered Member of Engineers Ireland and a licensed professional engineer in USA.</p> <p>Eileen has 30 years’ relevant experience and in particular, managed the planning and design for various road schemes including M7 Osberstown Interchange and R407 Sallins Bypass Scheme, M20 Cork – Limerick Motorway Scheme, M7/N24 Ballysimon Road Improvement Scheme, N22 Baile Bhuirne to Macroom Scheme and the Naas Southern Ring Road in Kildare.</p> <p>She has been directly responsible for the project management of the N6 Galway City Ring Road since commencement of work on this application to An Bórd Pleanála in December 2013 and has been assisted as required by members of the design team in compiling this EIAR. Eileen McCarthy supervised the preparation of Chapter 1 of the EIAR.</p>
Chapter 2 Planning and Policy Context	<p>Pauline Byrne MRUP BSc, Brady Shipman Martin – Planning</p> <p>Pauline Byrne is a Regional and Urban Planner with over 18 years’ experience in planning in Ireland and internationally. Pauline has a Masters in Regional and Urban Planning (MRUP) from University College Dublin, and a B.Sc. (Mgmt.) from Trinity College Dublin. Pauline is a Partner at Brady Shipman Martin and is head of the Planning Team in the Practice.</p> <p>Pauline has worked on urban planning strategies, planning policy, major city development initiatives, large scale infrastructure projects, public transport initiatives, industrial development initiatives, and arbitration cases, on behalf of Government departments and agencies, Local Authorities, State bodies and State companies, including NTA, OPW, ESB, Bord Na Mona, and the private sector. Pauline has previously inputted to environmental impact assessments in relation to Strategic Planning Policy Context on bus network planning in Dublin for the NTA. Pauline Byrne prepared Chapter 2 of the EIAR with assistance from Eileen McCarthy Arup.</p>
Chapter 3 Need for the Proposed Road Development	<p>Eileen McCarthy BE (Hons) MIEI CEng, MICE CEng, PE (USA), Arup</p> <p>See above</p> <p>Eileen McCarthy supervised the preparation of Chapter 3 of the EIAR.</p>
Chapter 4 Alternatives Considered	<p>Eileen McCarthy BE (Hons) MIEI CEng, MICE CEng, PE (USA), Arup</p> <p>See above</p> <p>Eileen McCarthy supervised the preparation of Chapter 4 of the EIAR.</p>

Topic	Main Author – Competency Details
Chapter 5 Description of Proposed Road Development	Eileen McCarthy BE (Hons) MIEI CEng, MICE CEng, PE (USA), Arup See above Eileen McCarthy supervised the preparation of Chapter 5 of the EIAR.
Chapter 6 Traffic Assessment and Route Cross Section	Andrew Archer, Systra - Traffic <p>Andrew Archer is a Chartered Engineer and Project Director for Systra’s operation in Ireland, with over 16 years of diverse and challenging experience in a wide range of transportation planning, policy and engineering projects. Through his work in Europe and the Middle East, Andrew has played a major role in strategic planning and innovative design on a number of key public and private sector transportation projects including land use and transportation studies, development masterplans, transport framework plans, highway scheme appraisal, and conceptual designs of transport infrastructure schemes. Andrew’s particular expertise lies in working with clients and stakeholders in a collaborative manner to develop practical and implementable strategies for large scale towns, urban regeneration projects or individual developments.</p> <p>Andrew has also managed and delivered a range of multi-modal transport studies across Ireland, including integrated land use and transportation framework plans, local area plans, traffic management strategies, road safety designs, school traffic management strategies and parking management schemes.</p> David Conlon, Systra - Traffic <p>David Conlon is an experienced Principal Transport Planning Consultant with 10 years’ experience. David joined SYSTRA on the Graduate Development Programme after a short period working with ILTP Consultants. David has a specialist knowledge in the preparation of transport models at a strategic and local level as well as project appraisal. With SYSTRA David has experience of a number of challenging model development projects and was project manager for the development of the National Transport Authority’s South East Regional Model (SERM). As Project Manager, David was responsible for the delivery of all aspects of the project including scoping, resourcing, overseeing the technical aspects of the model development, reviewing and issuing reports.</p> <p>David has also performed economic assessments of modelled options using TUBA and has a working knowledge of a wide variety of transportation software that includes SATURN, VISSIM, Paramics, OmniTrans and ArcGIS.</p> <p>Andrew Archer prepared Chapter 6 of the EIAR with assistance from David Conlon.</p>
Chapter 7 Construction Activities	Eileen McCarthy BE (Hons) MIEI CEng, MICE CEng, PE (USA), Arup- General Construction Activities See above Janet Lynch BEng, MCTWM, MIEI CEng, Arup - Waste <p>Janet Lynch is a Senior Project Engineer with Arup with over 17 years’ experience in Industrial Emissions licensing, EIA and planning including, Resource and Waste Management: Construction and operational waste management plans, Energy from Waste, waste re-use,</p>

Topic	Main Author – Competency Details
	<p>recycling and landfill, Innovative waste treatment technologies; Planning and EIA project management (energy, renewables, industrial, infrastructure); Industrial Emissions (IE) License applications & review (waste, biomass, oil and gas, energy, cement, pharmaceutical); Circular Economy; Water: Tender Assessments for Irish Water and Dublin City Council; Assistant Project Manager for the expansion of Irelands largest water treatment plant at Ballymore Eustace, Co. Kildare in 2006.</p> <p>Janet holds an honours degree in Civil and Environmental Engineering from University College Cork, a FETAC Certificate in Waste Facility Management and a Certificate in Applied Project Management from the IEI and University Limerick. She is a Chartered member of the Chartered Institution of Wastes Management (MCTWM) and a Chartered Member of Engineers Ireland.</p> <p>Janet Lynch prepared the waste section of Chapter 7 of the EIAR. Eileen McCarthy supervised the overall preparation of Chapter 7 of the EIAR.</p>
<p>Chapter 8 Biodiversity</p>	<p>Aebhín Cawley CEnv MCIEEM, Scott Cawley - Biodiversity</p> <p>Aebhín Cawley is a director of Scott Cawley Ltd. She holds a degree in Zoology from the University of Dublin (Trinity College) and also holds a postgraduate diploma in Physical Planning from the same university. She is a Chartered Environmentalist (CEnv) with the Society for the Environment (Soc Env) and a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Aebhín has sixteen years' professional experience, twelve of which have been in ecological surveying and impact assessment for public and private sector projects including road, rail and other major infrastructural projects. Aebhín has been undertaking Appropriate Assessment (AA) work in Ireland since 2002 and has been influential in determining the direction in which AA work is evolving in Ireland. She has delivered lectures and training on AA to a range of public and private sector organisations, including a range of planning authorities, as well as professional institutes. Aebhín regularly prepares AA Screening Statements as well as Natura Impact Statements (NIS) for AA and as such has current experience in best practise in undertaking Appropriate Assessments. Aebhín was the project director for the Biodiversity chapter of the EIAR and the NIS with overall responsibility for the delivery of those reports as well as for high-level input to the survey methodologies, assessment of impacts and development of the mitigation strategy. Aebhín also undertook specific elements of the field survey work.</p> <p>Andrew Speer MCIEEM, Scott Cawley - Biodiversity</p> <p>Andrew Speer is a principal ecologist at Scott Cawley and specialises in road projects. He holds an honours degree in Zoology from the National University of Ireland, Galway and a post-graduate diploma in Geographic Information Systems (GIS). He is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Andrew has over 11 years' experience as an ecological consultant with experience in Environmental Impact Assessment, GIS and mitigation design for development projects including national road schemes, wind energy projects, light rail, flood relief schemes, infrastructure projects and smaller scale commercial and residential developments. He has comprehensive experience in the preparation of AA Screening Reports and NISs for a range of projects and development plans. Andrew has undertaken and managed a wide range of field surveys including protected species surveys (e.g. badger, otter, newts, bats, wintering birds, breeding birds and aquatic species), habitat surveys and water quality monitoring. He is also an experienced ecological clerk of works for projects such as national road schemes, pipeline works and electricity supply schemes. Andrew has extensive GIS experience on both the</p>

Topic	Main Author – Competency Details
	<p>ArcGIS and Autodesk Map 3D platforms. Andrew was lead ecologist for the Biodiversity chapter of the EIAR and the NIS. He undertook and managed field and desk surveys, carried out the impact assessments and devised the mitigation strategy for flora and fauna on the project.</p> <p>Paul Scott, Scott Cawley CEcol, CEnv, MIEEM - Biodiversity</p> <p>Paul Scott is Director with Scott Cawley. He holds a first class honours degree in Environmental Biology from the University of Liverpool and a Masters in Pollution and Environmental Control from the University of Manchester. Paul is a Chartered Ecologist (CEcol), a Chartered Environmentalist (CEnv) and a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). He is on the Council of Bat Conservation Ireland, leads the Dublin Bat Group and All Ireland Nathusius Pipistrelle Working Group and is a licenced and trained bat handler with experience of hand-netting, harp trapping and mist netting of bats in Ireland and the UK. Paul is experienced in the assessment of impacts of major infrastructural developments on all Irish bat species. Paul has prepared ecological guidance notes designed for planners and developers on behalf of the four Dublin local authorities, including advice on compliance with legal protection for bats. Paul undertook specific elements of the field survey work (including bats) and prepared the text relating to bats in the EIAR.</p> <p>Andrew Speer was responsible for the preparation of Chapter 8 of the EIAR under the supervision of Aebh�n Cawley with the exception of bats which was prepared by Paul Scott.</p>
<p>Chapter 9 Soils and Geology</p>	<p>Juli Crowley BE MSc Eng MIEI CEng, Arup – Soils and Geology</p> <p>Juli Crowley is a Senior Geotechnical Engineer with Arup with over 12 years of engineering experience. She holds a Structural Engineering Degree from Cork Institute of Technology, a Masters in Geotechnical Engineering from Newcastle University and is a Chartered Engineer with Engineers Ireland since 2011. Juli has worked on a broad range of infrastructure, commercial, private and oil and gas projects at pre-tender stage, detailed design stage and post construction stage and has extensive geotechnical design and construction experience. Juli has prepared the soils and geology impact assessments for projects including the M20 Cork to Limerick Motorway.</p> <p>Juli Crowley prepared Chapter 9 of the EIAR.</p>
<p>Chapter 10 Hydrogeology</p>	<p>Dr. Leslie Brown PhD MSc BSc, Arup - Hydrogeology</p> <p>Dr. Leslie Brown is a senior hydrogeologist with 21-years groundwater expertise in Ireland, the United Kingdom and Middle East. As an academic Dr. Brown’s doctoral studies include delineating extents of groundwater bodies in karst aquifers, mapping surface and subsurface paleokarst features, quantifying karst flow pathways and limestone geology. He has undertaken post-doctoral research into quantifying recharge mechanisms and identification of hydrogeological pathways for catchment studies. As a consultant Leslie has worked with both the public and private sectors advising on hydrogeological matters for road developments, groundwater supply, turlough hydrogeology, determining zones of contribution to groundwater dependant terrestrial ecosystems and aquifer management. He has specialised on the hydrogeology of linear infrastructure since 2000 and is a co-author for the NRA (2009) Guidelines on Procedures for Assessment and treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.</p>

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	<p>Dr. Alison Orr PhD MSc BSc, Arup - Hydrogeology</p> <p>Dr. Alison Orr is a hydrogeologist with 3 years’ experience working in consultancy on projects in both Ireland and the UK. She has worked on road and metro developments, flood relief schemes, contaminated land, groundwater supply, ground source heating systems and determining zones of contribution for group water schemes. Prior to her consultancy work she completed a PhD into the fate and transport of nitrate in different hydrogeological settings across the island of Ireland.</p> <p>Dr Brown prepared Chapter 10 of the EIAR with the assistance of Dr. Orr.</p>
<p>Chapter 11 Hydrology</p>	<p>Tony Cawley BE M Eng Sc CEng MIEI, Hydro Ltd – Hydrology</p> <p>Anthony Cawley qualified with an honours degree in Civil Engineering from NUI Galway in 1987 and a post graduate master’s degree in Engineering Hydrology from NUI Galway in 1990. He is a Chartered Civil Engineer with specialist education and 28 years professional consulting experience in the water engineering field in a wide variety of activities relating to hydrology, hydrogeology and flooding, and hydrodynamic and hydraulic assessment of fluvial and tidal processes. Over that period he has been involved in well over 200 flooding and coastal modelling assessments.</p> <p>Tony has carried out in excess of 100 flood risk assessment studies on rivers, estuaries and coastal areas throughout Ireland. These studies ranged from scoping type assessments to detailed flood risk assessments involving hydrometric measurements river channel survey, hydraulic modelling and flood inundation mapping. Tony has successfully completed and defended at the oral hearing giving expert witness on the hydrology, hydrogeology, geology and soils components of the EIA assessment for numerous road schemes and infrastructure projects over the past 15 years including the M6, M20/M21, N23 and Lansdowne Stadium Redevelopment.</p> <p>He has also been retained as an expert consultant to An Bord Pleanála for the Dublin Docks Gateway and Alexandra Basin projects in respect to flooding and hydrodynamic processes and is experienced in the requirements of SEA and AA. Tony has been a Hydrology Expert on behalf of ESB involved in Court proceedings in respect to the River Lee Flooding of Cork City in November 2009 UCC v’s ESB.</p> <p>He was a lecturer in hydrology and hydraulics at the Hydrology and Civil Engineering Department at NUI Galway and currently lectures in Hydrology at the University of Limerick (2011 to date). Tony has provided training courses in Hydrology to the Western and Northwestern Fisheries Board and to Engineers Ireland, and Irish Rail and NRDO Design Offices.</p> <p>Tony Cawley prepared Chapter 11 of the EIAR.</p>
<p>Chapter 12 Landscape and Visual</p>	<p>Thomas Burns B Agr. Sc. Dip. EIA Mgmt MILI EFLA. Brady Shipman Martin – Landscape and Visual</p> <p>Thomas Burns is a Partner and landscape planner with Brady Shipman Martin. Thomas joined Brady Shipman Martin as a Landscape Architect after graduating from University College Dublin, in 1989. Thomas completed a post-graduate Diploma in Environmental Impact Assessment Management also in University College Dublin, in 1994 and was appointed an Associate of the Practice in 1997. Thomas became a Partner in 2002.</p>

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	<p>Thomas has a strong background in environmental, landscape and planning issues across a wide range of disciplines, including assessment and master-planning. For over 20 years, Thomas has been involved in the masterplanning, planning, environmental assessment and construction of a diverse range of projects, and as part of his involvement, has regularly given expert evidence at planning hearings and other public inquiries. Thomas has been directly involved in the environmental and landscape and visual assessments of many key national infrastructure projects, including over 750km of the national roads programme including the M20 Cork to Limerick Motorway Scheme, the M7 Osberstown Interchange and R407 Sallins Bypass, the Shannon LNG Facility, the Corrib Gas Terminal, T2 Terminal at Dublin Airport and the Dublin DART Underground project. Given his experience on National Roads, Thomas was commissioned by the TII to raft Guidelines for Landscape Treatments on National Roads in Ireland. He has also brought his environmental and landscape planning experience to projects such as the Strategic Environmental Assessment aspect of various statutory plans and programmes, including County Meath Development Plan 2013-2019; the Department of Environment IOSEA 5 and as well being part of the wider project team that carried out the Environmental Assessment of Food Harvest 2020.</p> <p>Thomas is an active member of the Irish Landscape Institute (ILI), where he was Chairperson of the Professional Practice Committee since its inception in 1995 until 2011. Thomas also previously served as the ILI Representative on the Council of the European Foundation of Landscape Architecture (EFLA) from 1997 to 2000.</p> <p>Thomas Burns prepared Chapter 12 of the EIAR.</p>
<p>Chapter 13 Archaeology, Architectural and Cultural Heritage</p>	<p>Faith Bailey MA BA MCIFA, IAC Archaeology – Archaeology, Architectural and Cultural Heritage</p> <p>Faith Bailey is a Senior Archaeologist and Cultural Heritage Consultant with IAC Ltd. She holds an MA in Cultural Landscape Management (archaeology and built heritage) and a BA in single honours archaeology from the University of Wales, Lampeter. Faith is a licence eligible archaeologist, a member of the CIfA and has over 13 years’ experience in the sector.</p> <p>Faith has been responsible for the production and delivery of a large number of archaeological and built heritage desk top assessments, surveys, EIA, master plans, LAP/SEA and management plans associated with all sectors of development in the Republic and Northern Ireland. Archaeological and Architectural EIA for large scale road schemes, include the M7 Osberstown Interchange and R407 Sallins Bypass Scheme, the M11 Enniscorthy Bypass in County Wexford and the N22 Ballyvourney-Macroom Bypass in County Cork.</p> <p>Faith’s in-depth knowledge of the planning systems and heritage legislation within both the Republic of Ireland and Northern Ireland, twinned with the excellent working relationship with clients and statutory authorities makes her one of the most experienced archaeological and cultural heritage consultants currently operating within the sector.</p> <p>Faith Bailey prepared Chapter 13 of the EIAR.</p>

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<p>Chapter 14 Material Assets Agriculture</p>	<p>Con Curtin, Curtin Agricultural Consultants Ltd – Material Assets Agriculture</p> <p>Con Curtin is an agricultural consultant with an undergraduate honours degree in Agricultural Science from University College Dublin (1987), a Level 6 Certificate in Agricultural Land Drainage (awarded by Teagasc in 2016) and has 30 years’ experience working in the agricultural consultancy sector. He has worked for three years with ADAS (Agricultural Development and Advisory Service) in the UK as an agricultural advisor, and since 1990 as an agricultural consultant in Ireland. In 1996 he established his own company, Curtin Agricultural Advisers Ltd.</p> <p>Con divides his time between general consultancy work for his farmer clients (dairy, pigs, beef, sheep and equine) and Land Use / Agricultural Environmental Impact Reports for consulting engineers. Con has prepared Land Use / Agricultural Impact Reports for linear developments such as railway schemes, electricity overhead lines and major roads schemes (15 No. since 1998) including; M20 Cork to Limerick Motorway Scheme (80km); N22 Baile Bhuirne to Macroom (25km); M7 Castletown to Nenagh (40km); N25 New Ross Bypass (13.5km); N25 Waterford Bypass (40km); and N6 Galway City Outer Bypass (21km – 2006 planning application). He has prepared constraints and route selection reports and presented oral evidence at public hearings for most of these road projects. He has prepared the Land Use Impact Report for the North - South 400kV Interconnection Development (140km) in Counties Meath, Cavan, Monaghan, Armagh and Tyrone. Con has carried out land damage assessments for Bord Gais along gas pipelines in Northern Ireland and the Republic of Ireland and advises on drainage issues.</p> <p>Michael Sadlier, EVC - Equine</p> <p>Michael Sadlier graduated as a veterinary surgeon from University College Dublin in 1983. Since then, he has worked in veterinary practice around the world, specialising in equine medicine and surgery. He has also achieved numerous post graduate qualifications – a certificate in Equine Stud Medicine from the Royal College of Veterinary Surgeons in 1989, membership by examination of the Australian College of Veterinary Scientists in Equine Surgery in 1992 and achieved a Certificate in Equine Surgery from the Royal College of Veterinary Surgeon in Equine Orthopaedic in 1995.</p> <p>He is currently a Partner in a Six Partner Multi-Site Veterinary Hospital on the Curragh, Co. Kildare that employs another 13 veterinary surgeons and 22 support staff. The practice provides a referral facility for the whole of Ireland and is a world recognised centre of excellence.</p> <p>He is currently an elected member of the Veterinary Council of Ireland, which is the statutory regulatory body for the profession in Ireland. He has been the Irish representative on the National Council of the British Equine Veterinary Association for the past 8 years. Michael was a Past Chairman of the Equine Committee of Veterinary Ireland, the representative body for the profession in Ireland. He also has served on the Board of Directors of Veterinary Ireland and on the Board of Governors of the Irish Equine Centre. He is a regular speaker at veterinary meetings, nationally and internationally.</p> <p>Michael Sadlier has provided expert equine veterinary opinion to TII on the potential effects the following road schemes (M8, M17, N4, N11, N18, N22 N30, N60 and N61) would have on selected equine properties. He has also provided expert equine veterinary opinion to Iarnrod Eireann on the proposed Navan to Dunboyne Rail development, Bord Gais on Baunlusk to Great Island Gas Pipeline and Eirgrid on the North-South Interconnector and Cork-Kildare 400kV Line and the potential impacts these schemes would have had on numerous equine properties on</p>

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	<p>the proposed routes. He has also assessed the effects the proposed incinerator at College Proteins in Nobber, Co. Meath would have on surrounding equine holdings.</p> <p>Con Curtin prepared Chapter 14 of the EIAR with assistance from Michael Sadlier.</p>
<p>Chapter 15 Material Assets Non Agriculture</p>	<p>Eileen McCarthy BE (Hons) MIEI CEng, MICE CEng, PE (USA), Arup – private dwellings See above</p> <p>Dr. Craig Bullock, Optimize Consultant – Commercial Properties Dr. Craig Bullock has a PhD in Environmental and Resource Economics (UCD, 2004) and a Diploma in Environmental Impact Assessment (UCD, 2001). He has written over 40 peer-reviewed papers in environmental policy/economics and socio-economics.</p> <p>Craig has over 17 years’ experience working in the field of environmental impact assessment (Human Beings and Social/Socio-Economic assessment) and over 20 years in the fields of environmental policy analysis, environmental economics and socio-economics. He manages his own consultancy www.optimize.ie which was registered in 1999 and has also been a part-time research fellow in University College Dublin since 2001.</p> <p>During this time Craig has worked on over 30 environmental impact assessments of road projects, public transport, flood mitigation, waste water treatment, peat extraction, residential and hotel development. This experience has included large scale projects such as the DART Underground development, Swords-City Centre Bus Rapid Transit and the M20 motorway scheme. He has acted as specialist witness for many of these projects.</p> <p>Gareth Maguire BSc. MRIAI, RIBA, BDP – University Masterplanner Gareth Maguire is an Architect Director with BDP in Dublin. BDP are a large multi-disciplinary practice with over 700 professionals across the globe. BDP are working in third level campuses across Ireland on various major development projects.</p> <p>He leads the BDP Architects group in Ireland. Gareth has over 25 years’ experience of working as an Architect and Master planner across Ireland and the UK.</p> <p>Gareth holds a first class honours degree in Architecture from Queens University Belfast, a Post graduate diploma in project management from Trinity College Dublin and a masters in Architecture from Glasgow School Art, University of Glasgow. He is a Chartered Member of the Royal Institute of Architects in Ireland (MRIAI) and a member of the Royal Institute of British Architects (RIBA),</p> <p>Gareth is an architect and urbanist who specialises in campus masterplanning. He has completed a number of major campus master plans recently for Maynooth University, Limerick Institute of Technology and also Haulbowline Island along with the Irish Maritime Cluster in Ringaskiddy, Cork. In the past he has also been involved with the University of Limerick campus 2020 Masterplan proposals for the expansion of their campus across the River Shannon into County Clare. This is now one of the largest university sports campus’ in Ireland.</p>

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	<p>He also sits with Maynooth University and LIT’s Capital Development Advisory Committees advising on the appropriate development and integration of numerous live projects within their campuses. He is currently designing a major new sports campus for Maynooth University as part of their immediate future campus expansion programme.</p> <p>His various projects currently include a major masterplan and public realm upgrade for the upgrading of Clanbrassil Street in Dundalk, Haulbowline Island Visioning Masterplan and proposals for Waterford Institute of Technology’s Carriganore Sports and Technology Campus.</p> <p>Michael Saddlier – Equine</p> <p>See above</p> <p>Eileen McCarthy supervised the preparation of Chapter 15 of the EIAR with assistance of Dr. Craig Bullock for the assessment of commercial properties, Gareth Maguire in relation to NUIG Sporting Campus and Michael Saddlier for Galway Racecourse.</p>
<p>Chapter 16 Air Quality and Climate</p>	<p>Sinead Whyte MSc CMIWEM, Arup – Air Quality and Climate</p> <p>Sinead Whyte has over 18 years’ experience as an Environmental Consultant. She holds a MSc in Experimental Physics and is Chartered for over 10 years with the Institute of Water and Environmental Management. She has prepared numerous Air Quality and Climate Impact Assessments for infrastructural developments including DART Underground, M20 Cork to Limerick Motorway, M7 Osberstown Interchange and R407 Sallins Bypass and N9/N10 Kilcullen to Powerstown. Sinead presented expert witness evidence at the An Bord Pleanála oral hearings into these developments.</p> <p>Sinead Whyte prepared Chapter 16 of the EIAR.</p>
<p>Chapter 17 Noise and Vibration</p>	<p>Jennifer Harmon BSc- AWN Consulting Limited – Noise and Vibration</p> <p>Jennifer Harmon is Senior Acoustic Consultant at AWN Consulting. She has worked as a consultant since 2000, specialising in acoustics since 2001. She holds a BSc in Environmental Science, a Diploma in Acoustics and Noise Control and is a full member of the Institute of Acoustics (IOA). Jennifer has extensive experience in the field of environmental noise and vibration impact assessment, noise control engineering, building and room acoustics. Jennifer has prepared noise and vibration impact assessments for a wide range of transport projects across Ireland including new road schemes, road realignment and upgrade projects, light and heavy rail projects and landside air-noise. Her experience in road traffic noise impact assessment includes extensive baseline studies, detailed transport noise models, noise mitigation design and construction impact assessments.</p> <p>Jennifer Harmon prepared Chapter 17 of the EIAR.</p>

Topic	Main Author – Competency Details
<p>Chapter 18 Human Beings, Population and Human Health</p>	<p>Dr. Craig Bullock, Optimize Consultant - Socio-Economic Assessment See above</p> <p>Health assessment</p> <p>Dr. Martin Hogan, EHA Occupation Health Hygiene Consultants – Health Dr. Martin Hogan is a medical doctor, registered with the Irish Medical Council as a Specialist in Occupational Medicine since 1997. He has 20 years’ experience in assessing Human Health impacts of proposed developments and has contributed to many Environmental Impact Statements. He has given evidence in over 20 Oral Hearings including transport infrastructure such as road, rail and airport development, as well as waste management including landfills and incinerators.</p> <p>His specialist interests include Occupational Medicine in the Pharmaceutical and Chemical industry and Environmental Medicine. He lectures in Toxicology in University College Cork. He is a past National Speciality Director of Occupational Medicine in Ireland and a past Dean of the Faculty of Occupational Medicine of the Royal College of Physicians of Ireland. He is the President of the Organising Committee for ICOH 2018 and a member of the Board of ICOH (International Commission on Occupational Health).</p> <p>John Cronin BA, John Cronin & Associates – Irish Language John Cronin is a cultural heritage and conservation consultant with 24 years’ postgraduate experience garnered in the public and private sectors. He holds a B.A. in Archaeology and Geography from University College Cork and was awarded postgraduate degrees in planning and conservation from University College Dublin. Since entering private practice in 2000, Mr. Cronin has specialised in assessing the impact of development on cultural heritage resources and has acted as consultant to The Heritage Council, the National Inventory of Architectural Heritage and Fáilte Ireland. Mr. Cronin has prepared cultural heritage assessments for environmental impact assessments throughout Ireland (both within Northern Ireland and the Republic of Ireland). Since 2006, John Cronin & Associates have prepared language impact assessments for numerous development projects within Gaeltacht areas. Noteworthy assessments have included:</p> <ul style="list-style-type: none"> ● N59 Maigh Cuilinn (Moycullen) Bypass Road Development, County Galway ● N6 Galway City Outer Bypass 2006, County Galway ● Housing Development, Ballynabooly, Dingle, County Kerry ● Tourism Development, Cloghan Lodge, Ballybofey, County Donegal ● Residential development, Rathkieran, The Glen, Ballinskelligs, County Kerry <p>Dr. Craig Bullock and Dr. Martin Hogan with assistance from John Cronin on the Irish Language both prepared Chapter 18 of the EIAR.</p>

Topic	Main Author – Competency Details
Chapter 19 Major Accidents, Inter-relationships, Interactions and Cumulative Impacts	Eileen McCarthy BE (Hons) MIEI CEng, MICE CEng, PE (USA), Arup See above Eileen McCarthy supervised the preparation of Chapter 19 of the EIAR.
Chapter 20 Summary of Mitigation Measures and Residual Impacts	Eileen McCarthy BE (Hons) MIEI CEng, MICE CEng, PE (USA), Arup See above Eileen McCarthy supervised the preparation of Chapter 20 of the EIAR.
Chapter 21 Schedule of Environmental Commitments	Eileen McCarthy BE (Hons) MIEI CEng, MICE CEng, PE (USA), Arup See above Eileen McCarthy supervised the preparation of Chapter 21 of the EIAR.

1.2.6 EIAR Scoping

“Scoping” is a process of deciding what information should be contained in an EIAR (EIS) and what methods should be used to gather and assess that information⁸. Informal EIAR (EIS) scoping of N6 Galway City Ring Road (GCRR) was carried out in order to determine the content and extent of the matters which should be covered in the environmental information to be included in the EIAR. As part of the EIAR scoping process, a scoping report was issued to all relevant statutory and non-statutory consultees. These consultees are included in **Section 1.4** of this report. Comments received during this consultation phase were reviewed and considered in the preparation of this document.

1.2.7 EPA Guidelines and other guidelines

This EIAR has been prepared with due regard to the guidelines on the preparation of environmental impact assessment reports published by the EPA. These are contained in:

- Guidelines on the information to be contained in Environmental Impact Statements, 2002, EPA
- Advice Notes on Current Practice (in preparation of Environmental Impact Statements), 2003, EPA

Moreover, the EIAR has been prepared having had due regard to:

- Draft Guidelines of the information to be contained in Environmental Impact Assessment Reports, 2017, EPA
- Revised Guidelines on the Information to be Contained in Environmental Impact Statements (Environmental Protection Agency, draft September 2015)
- Advice Notes for Preparing Environmental Impact Statements Draft September 2015
- European Union (2013) Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment
- European Commission (2017) Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU)
- European Commission (2012) Interpretation suggested by the Commission as regards the application of the EIA Directive to ancillary/associated works
- European Commission (2006) Clarification of the application of Article 2(3) of the EIA Directive
- European Commission (1999) Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions
- Transport Infrastructure Ireland (formerly National Roads Authority) (2008) Environmental Impact Assessment of National Road Schemes – A Practical Guide

⁸ EPA 2015 Revised Guidelines on the information to be contained in EISs, Draft Sept 2015.

1.3 Background

This section provides some background to the proposed road development. **Section 1.3.1** gives an overview of the N6 Galway City Outer Bypass which was an earlier project for a bypass of Galway City that went through the planning process in 2006. **Section 1.3.2** outlines the development of the transport solution to address the very serious traffic issues facing Galway City and the Galway Transport Strategy (GTS).

1.3.1 N6 Galway City Outer Bypass

The N6 Galway City Outer Bypass, an earlier scheme, was previously developed and submitted to An Bord Pleanála (ABP) for approval on 1 December 2006. A brief summary of its history is outlined below.

Consultants were appointed in 1999 to undertake feasibility studies, route selection, design and planning for the N6 Galway City Outer Bypass. The resultant scheme including the Compulsory Purchase Order (CPO) and Environmental Impact Statement (EIS) was submitted to An Bord Pleanála (ABP) on 1 December 2006. This scheme consisted of 21.4km of mainline, 9km of link roads, associated junctions and a major bridge crossing of the River Corrib. This scheme is referenced as the N6 Galway City Outer Bypass (2006) together with the acronym of 2006 GCOB throughout this report.

On 28 November 2008, ABP delivered its decision in respect of the 2006 GCOB. ABP considered that the need for an outer bypass of Galway City connecting the existing N6 on the east to the R336 Coast Road on the west as an essential part of the strategic transport network of the Galway area had been established.

ABP granted approval for the eastern part of the scheme, the section from the N59 Moycullen Road east to the existing N6, inclusive of both junctions at the N59 Moycullen Road and the existing N6. In its decision, ABP noted its consideration of all data presented and granted approval as it considered that the part of the road development being approved would be an appropriate solution to the identified traffic needs of the city and surrounding area. ABP noted that there would be a localised severe impact on the Lough Corrib candidate Special Area of Conservation (cSAC)⁹.

However, given that a section of the proposed road development would cut through Tonabrocky Bog which is:

- part of the Moycullen Bogs Natural Heritage Area (NHA)
- an active Blanket bog listed as a priority habitat in Annex I of the EU Habitats Directive
- the site of a population of Slender cotton grass which is a legally protected and vulnerable species

ABP was not satisfied that this part of the proposed road development, between the N59 Moycullen Road and R336 Coast Road, would not be prejudicial to the preservation of the Tonabrocky bog habitat or that the significant adverse effects

⁹ Reference ABP decision 07.ER.2056

on the environment would not be avoidable or could not be better addressed by an alternative route¹⁰, and that therefore ABP considers that this part of the proposed road development would be contrary to the proposed planning of sustainable development of the area.

An application was made by a third party to the High Court seeking leave to issue judicial review proceedings against the ABP decision which granted approval of the eastern section of the 2006 GCOB under Article 6(3) of the Habitats Directive (92/43/EEC), as amended. The basis for the request for a review was that ABP had erred in its interpretation of Article 6 of the Habitats Directive (92/43/EEC), as amended, in arriving at the conclusion that the effect of the 2006 GCOB road scheme on the Lough Corrib cSAC designated site would not constitute an adverse effect on the integrity of the site.

The High Court undertook a judicial review of the ABP decision. The High Court decision of 9 October 2009 upheld ABP's decision to approve the eastern part of the scheme. On 6 November 2009, the third party was granted leave to appeal to the Supreme Court against the High Court decision of 9 October 2009. The Supreme Court sought the opinion of the Court of Justice of the European Union (CJEU) on an interpretation of the Habitats Directive.

The opinion of the CJEU was delivered on the 11 April 2013 (Case C-258/11). The opinion concluded on two significant points:

1. The 2006 GCOB would have an adverse effect on the integrity of the Lough Corrib cSAC due to the removal of 1.47ha of Limestone pavement (a habitat type for which the cSAC was selected)
2. Given that the 2006 GCOB would have an adverse effect on the integrity of the cSAC, the proposed scheme could not be authorised under Article 6(3) of the Habitats Directive. It could only be authorised under Article 6(4) of the Habitats Directive

The CJEU opinion (i.e. Case C-258/11) established that the loss of a relatively small area of Priority Annex I habitat, where it is a habitat for which the Lough Corrib cSAC is selected, would adversely affect the integrity of the Lough Corrib cSAC and that the provisions of Article 6(4) must apply in granting consent for the project i.e.

6(4) "If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted".

Following receipt of the CJEU opinion, the Supreme Court quashed the earlier ABP decision to grant approval of the eastern section of the 2006 GCOB under Article 6(3) of the Habitats Directive, as amended.

As the decision of the Supreme Court was that the original 2006 GCOB scheme could not be granted approval per Article 6(3) of the Habitats Directive, the next recourse to secure planning was to advance the scheme under Article 6(4) of the

Habitats Directive. Noting what ABP in its decision on the 2006 GCOB stated, namely that the need for an outer bypass of Galway City connecting the M6/N6 national primary road at Garraun to the R336 regional coast road, being an essential component of the strategic transport network of the Galway area, had been established and having reviewed the requirements of Article 6(4), it was decided to reassess the work to date to ensure that all possible alternatives were investigated in advance of proceeding under Article 6(4). Therefore, the process of developing a transportation solution for Galway City and its environs had to recommence from the start at Phase 1, feasibility and concept stage, to ensure that all possible alternatives were fully investigated.

Further consideration of the N6 Galway City Outer Bypass (2006) is detailed in **Chapter 4, Alternatives Considered**.

1.3.2 Development of a Transport Solution for Galway

The need for the proposed road development has been considered at both a regional level in terms of its strategic function, and at a local level in terms of providing an integrated transport solution for the city and environs. Therefore, the development of the transport solution has involved a wide selection of stakeholders, all of whom had an integral part in developing the vision but more critically all have an integral part in ultimately delivering the solution also.

Galway County Council, Galway City Council, Transport Infrastructure Ireland¹⁰ (formerly known as National Roads Authority) and the National Transport Authority (NTA) collaborated in developing a transport vision for Galway where all elements of transport are working together to achieve an integrated sustainable solution. This section summarises the development of this transport vision, part of which includes the proposed road development.

The N6 Galway City Transport Project (GCTP) refers to the initial studies undertaken for the transport solution in Galway. The Galway Integrated Transport Management Programme (ITMP) began as the transport strategy developed by Galway City and County Council in partnership with the NTA in parallel to the N6 GCTP and is now referred to as the Galway Transport Strategy (GTS). The GTS has taken into account and seeks to achieve the objectives laid down in Smarter Travel. The N6 Galway City Ring Road is the road component of the transport solution identified in the N6 GCTP and orbital route identified in the GTS and the subject of this EIAR. This confirms that the proposed road development has been designed in accordance with the objectives of Smarter Travel and the above listed policies.

¹⁰ The Minister for Transport, Tourism and Sport signed the order for the merger of the National Roads Authority (NRA) with the Railway Procurement Agency (RPA) to establish a single new entity called Transport Infrastructure Ireland (TII). The National Roads Authority is known as Transport Infrastructure Ireland (TII) since 1 August 2015. All references to guidance documents and standards within this report will retain the *NRA* reference until such time as these documents are updated.

1.3.2.1 N6 Galway City Transport Project

The initial studies for this transport solution were undertaken as part of the N6 Galway City Transport Project (GCTP). The N6 GCTP recognised that Galway has a transport problem and confirmed that there is a strong need to address the transport issues facing the city and surrounding areas at present, and to underpin future growth by establishing a long-term strategy for transport to, within and around the city. The studies undertaken for the N6 GCTP confirmed that a new River Corrib bridge crossing is possible and identified a preferred location for this crossing. The proposed road development which incorporates this river crossing is now referred to as the N6 Galway City Ring Road (GCRR) and is the subject of this EIAR.

Further details on the studies (such as constraints and options development) carried out as part of the N6 GCTP are provided in **Chapter 4, Alternatives Considered** of this EIAR.

1.3.2.2 Galway Transport Strategy

In parallel to the N6 GCTP, Galway City Council and Galway County Council, in partnership with the NTA developed an overall transport strategy for Galway City and its environs culminating as Galway Transport Strategy (GTS) which provides Galway City and its environs with a clear implementation framework for transportation over the next 20 years. The GTS aims to address the current and future transport requirements for the city and its environs, which encompasses the city and its connectivity to surrounding towns and villages, including Bearna, Oranmore, Moycullen and Claregalway.

Consultation with key stakeholders and the public was undertaken throughout to inform the development of the strategy. This strategy was subsequently endorsed by the elected members of both the City and County Council and forms part of the current Galway City Development Plan and Galway County Development Plan.

The GTS included an evaluation of transport options for all modes, and affirmed the strategic need for an orbital route around the city centre and a new crossing of the River Corrib, in order to implement the level of service required for each mode of transport, including walking, cycling, public transport and private vehicle.

In order to achieve a connected city and environs, the GTS seeks to deliver an integrated network of 'links' (routes) and 'nodes' (stops and interchange locations) along which people can travel seamlessly, changing corridors and modes as necessary to make their journey. Traffic within the city's central area needs to be managed to make it a more comfortable environment for pedestrians and cyclists, and to ensure that public transport travelling through the city is reliable at all times of the day. This is essential to achieve a travel mode shift in favour of public transport. Key aims of the GTS are therefore to reduce vehicular movement through the city centre, to reduce vehicle speeds in the core city centre area, and to prioritise active modes (walking and cycling) and public transport in the city centre. The strategy therefore provides for routing of traffic which currently passes through the centre (to reach edge-of-centre locations) to more suitable orbital routes around the core city centre area.

The GTS recognised that some journeys across the city are not always convenient by non-car modes and considered it necessary to provide a resilient/reliable cross-city route via an orbital route for travel by road. The GTS requires the additional orbital traffic capacity so as to facilitate the re-allocation of existing road space for use by pedestrians, buses and cyclists, and noted that, unless additional capacity is provided for traffic, the overall objectives for the GTS will not be met.

There are currently four crossings of the River Corrib and each bridge is currently at capacity. The GTS proposes to make one of these crossings available for public transport only, forcing traffic to divert out to the Quincentenary Bridge. Therefore, an additional crossing of the River Corrib is required to effectively implement the orbital route. This additional crossing of the River Corrib is being progressed as part of the N6 Galway City Ring Road (GCRR). ABP also considered in the 2006 GCOB Scheme that the need for an additional crossing of the River Corrib had been established.

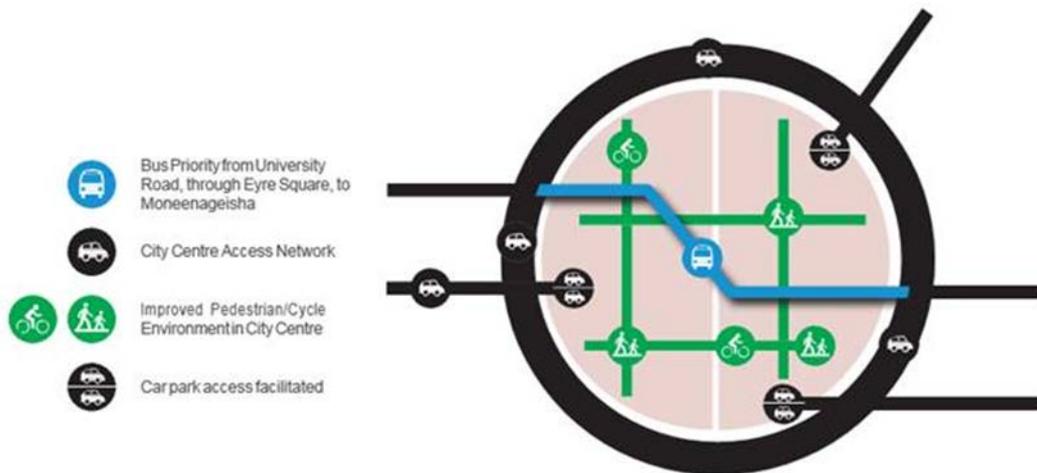
A new road link to the north of the city is proposed as part of the GTS to deliver the necessary capacity and support the delivery of sustainable transport measures, particularly within the city centre. This new link road is being progressed as part of the N6 Galway City Ring Road (GCRR).

The routes through and around the city have been classified on different levels in order to separate journeys by type and assign the most suitable journey types to each road network or alternative mode. Heavy traffic flows that do not have a destination within the city centre will be encouraged to undertake their journeys via alternative routes, and through-traffic is to be removed from the city centre as much as is feasible. In doing so, and by adopting policies intended to change the hierarchy of transport users in the city at present, capacity can be released and safeguarded in the core city centre area, and subsequently this capacity can be used to prioritise sustainable transport modes.

The GTS aims to remove non-essential motorised traffic from the core city centre area (i.e. traffic travelling through the city centre whose origin and destination lie outside the city centre). This will be achieved using a combination of routes around the city centre (termed the 'City Centre Access Network' shown in black in **Plate 1**), and will prioritise other modes within the core city centre area via the 'Cross-City Link' (shown in blue on **Plate 1**), a proposed corridor through the core city centre area with higher levels of priority allocated to walking, cycling and public transport over private car traffic.

Plate 1: City Centre Access Network

The core city centre area inside of the City Centre Access Network, will see road space reallocated to prioritise public transport and active modes. This will in turn facilitate public realm improvements along the Cross-City Link corridor, but requires changes in movements for private cars within the city centre to facilitate this. The city centre remains accessible, but priority is no longer given to the private car in this area or to the through movement in this area. This is best explained graphically in **Plate 2** below.

Plate 2: Cross-City Link Concept

Closing down and limiting access through the city within the area inside of the City Centre Access Network will facilitate a modal shift in the core area, whilst also shifting traffic out to the orbital route, which is the proposed road development. It is sequential: modal shift occurs within the core, and non-core traffic is shifted out to the orbital route. Therefore, the proposed road development, which is the subject of this EIAR, is a necessary component of the Galway Transport Strategy in order to deliver the transport solution for Galway. The achievement of maximum modal

shift is contingent on the construction of the proposed road development (refer to **Chapter 6, Traffic Assessment and Route Cross-Section**).

The EIA process for the proposed road development is a stand-alone process and is not reliant on the other components of the GTS. Nevertheless, where relevant, the cumulative impacts of other proposals within the GTS will be assessed as part of the EIA process where applicable.

1.4 Consultation Process/Non-Statutory Consultation

Extensive consultation has taken place via public information sessions and discussions with key stakeholders, relevant statutory bodies, property owners, local organisations and utility/service providers throughout the constraints and route selection stages, design stage and during the EIA process.

Key stakeholders and statutory bodies included:

- An Bord Pleanála
- Galway County Council
 - Chief Executive
 - Director of Services for Planning, IR, Community, Enterprise & Economic Development
 - Director of Services for Water Services and Environmental
 - Director of Services for Roads, Transportation, Marine and General Services
 - Director of Services for Housing, Corporate & Emergency Services
- Galway City Council
 - Chief Executive
 - Director of Services for Planning & Transportation
 - Director of Services for Finance, Management Services Unit and Water Services
 - Director of Services for Economic Development, Community & Culture, Corporate Services, ICT and Human Resources
 - Director of Services for Housing & Social Inclusion, Environment & Recreation and Amenity
- The Minister for the Environment, Community and Local Government (now referred to as Minister for Housing, Planning, and Local Government with community and rural affairs forming a new department)
- The Minister for Communications, Energy and Natural Resources (now referred to as Minister for Communications, Climate Action and Environment)
- The Minister for Transport, Tourism and Sport
- The Minister for Arts, Heritage, Regional, Rural and Gaeltacht Affairs (now referred to as Minister for Culture, Heritage and Gaeltacht)
- Development Applications Unit of the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs
- Department of Agriculture, Food and the Marine

- West Regional Authority
- Iarnród Éireann
- Córas Iompair Éireann
- Bus Éireann
- City Direct
- Galway Harbour
- Transport Infrastructure Ireland (TII)
- An Chomhairle Ealaíon (The Arts Council)
- Fáilte Ireland
- An Taisce
- The Heritage Council
- Waterways Ireland
- Environmental Protection Agency (EPA)
- Health and Safety Authority
- Commission for Energy Regulation
- Health Service Executive
- Office of Public Works
- Bat Conservation Ireland
- Bird Watch Ireland
- Irish Raptor Study Group
- Irish Georgian Society
- Geological Survey of Ireland
- American Chamber of Commerce
- Galway Chamber of Commerce
- Inland Fisheries Ireland
- Inland Waterways Association of Ireland
- Irish Wildlife Trust
- Met Éireann
- Irish Farmers Association
- Irish Peatland Conservation Trust
- National Museum of Ireland
- National University of Ireland, Galway
- Galway City Development Board
- Galway County Development Board

1.4.1 Public Consultation

Four public information sessions were held as follows and are discussed further below:

- Public Consultation No. 1 as part of the Constraints Study in July 2014 over two days
- Public Consultation No. 2 as part of the Options Development in January/February 2015 over four days
- Public Display No. 3 of the Emerging Preferred Route Corridor for the N6 Galway City Ring Road in May/June 2015 over two days. The Galway Transport Strategy also formed part of this consultation
- Public Display No. 4 of the Design of the N6 Galway City Ring Road in November 2016

Feedback received from the public consultations informed the constraints study and development of route options and the design of the emerging preferred route once selected. The local knowledge received at the public consultation and through submissions received identified new constraints and informed the development of route options and selection of the emerging preferred route corridor (EPRC). It also reinforced the traffic problems experienced in Galway City and its environs and need for an integrated transport solution which was multi-modal. This led to a parallel study of public transport and smart mobility measures which culminated in the Galway Transport Strategy (GTS). The historical importance of Menlough Village and the extents of communities across the study area were better understood post public consultation. The consultations with the public also reinforced the significant constraints present restricting the development of a new road and whilst some of the significant impacts were unfortunately unavoidable some positive changes were implemented into the design. Some of these include: the junction strategy in the Bearna Area and the retention of the mass path in Parkmore; landscape and visual improvement including the lowering of the proposed road development from an overbridge to at-grade junction at Cappagh Road and changing from an overbridge at Hynes' Boreen in Castlegar to being in a cutting to at-grade; moving the N59 Letteragh Junction further west and revision of the Coolagh Junction. 'Green reinforced embankments' instead of concrete retaining walls have also been incorporated into the design where the proposed road development is in close proximity to dwellings. These enhancements and others made to the design following feedback from public consultations is detailed further in **Chapter 4, Alternatives Considered**.

1.4.1.1 Public Consultation No. 1 – Constraints

As part of the Constraints Study, public consultation sessions were held on Monday 14 July 2014 in the Westwood Hotel, Dangan from 10:00am to 9:00pm and on Tuesday 15 July 2014 in the Pillo Hotel, Headford Road from 10:00am to 9:00pm.

The initial results of the constraints study were displayed to the public at the consultation sessions. The aim of this was to receive feedback from the public and

gain invaluable information from their local knowledge of constraints that may have been overlooked.

Representatives from Arup and Galway County Council were in attendance to assist the public in explaining the material on display. Over 100 people signed the attendance register.

The main feedback from this public consultation was as follows:

1. The scheme study area should extend further west and north
2. Concerns were raised in relation to the restrictions on lands located along the road of the N6 Galway City Outer Bypass (2006)
3. An additional crossing of the River Corrib was required and this new bridge should not adversely affect the navigation of the River Corrib
4. Current traffic and congestion issues, including inadequacies in the current public transport network were highlighted. Bus frequencies, routes and infrastructure need to be improved
5. Provision of a connection to the R336 west of Bearna
6. Proposals to tunnel under the Limestone pavement
7. Provision of school buses would provide a safe mode of transport for children and ease congestion at peak morning times
8. Additional constraints were identified

Full details of this consultation and submissions received from the public are contained in **Appendix A.1.1**.

1.4.1.2 Public Consultation No. 2 – Options

Public consultation sessions were held on Wednesday 28 and Thursday 29 of January 2015 in the Westwood Hotel, Dangan, from 2.00pm to 8.00pm, and on Tuesday 3 and Wednesday 4 of February 2015 in the Menlo Park Hotel from 2.00pm to 8.00pm. Over 1,450 people signed the attendance register over the four days of public consultation sessions.

These sessions formed part of the option selection process. Boards documenting the options examined to date and their feasibility were displayed, along with proposed solution options incorporating public transport, smarter travel and road-based components. Maps showing proposed road-based solutions with the constraints gathered during the Constraints Stage were also displayed. Representatives of Arup and Galway County Council were available throughout the sessions to answer questions and explain the material on display as needed. The aim of the public consultation sessions was to receive feedback and suggestions from the public regarding the proposed solutions. Submissions from the public of suggestions of possible modifications to the options presented, or additional information on further constraints, which may not have been taken into account at Constraints Stage, were welcomed both during the consultation sessions and afterwards, until the 6 March 2015.

Individual meetings with landowners, stakeholders, business owners and residents within the scheme study area were held in the weeks following the formal consultation. These were held at the request of the private individuals and drawings were prepared for each one to show the proximity of their property to the proposed road component options. Feedback from these meetings and submissions received were noted and any further constraints were sent to the full design team including the environmental specialists for inclusion in their assessment.

The main feedback from this public consultation are as follows:

- Greater importance given to the protection of environmental habitats over humans
- Viability of going back to the 2006 GCOB scheme
- Impacts of demolition to homes and businesses
- Impact on the environment, noise and air pollution
- Impact to communities and cultural heritage of many townlands e.g. Menlough, Castlegar, Coolagh, Ragoon, Dangan/Bushypark, Knocknacarra and Bearna
- Impact on recreational amenities such as NUIG Sporting Campus
- Health and safety of primary school children in close proximity to proposed routes
- Impact to commercial businesses and local economy of Galway
- Implementation of improved public transport and smarter mobility

Full details of this consultation and submissions received from the public are contained in **Appendix A.1.2**.

1.4.1.3 Public Display of Emerging Preferred Route Corridor

Public display sessions were held on 25 and 26 May 2015 on the Emerging Preferred Route Corridor (EPRC) at two locations in Galway, one west of the River Corrib and one east of the River Corrib. Details of the EPRC and the route selection process were on display over the two-day period and were available at the project office until the end of August 2015.

Galway City Council in conjunction with the National Transport Authority (NTA) also consulted with the public over this two-day period on the details of the Integrated Transport Management Programme (ITMP) (now referred to as the GTS). The display boards for the ITMP were moved to City Hall for unattended viewing following the public display sessions.

The joint presentation and consultation on the overall solution was very worthwhile as it afforded the public an opportunity to see how the component parts of the solution fit together to deliver an overall transport solution.

The general feedback on the road component of the transport solution included commentary on the following issues:

1. Implementation of improved public transport and smarter mobility should be prioritised over a road scheme
2. Greater importance given to the protection of environmental habitats over humans
3. Viability of going back to the N6 Galway City Outer Bypass (2006) route in the Bearna area
4. Impacts of demolition to homes and businesses
5. Impact to communities and cultural heritage of many townlands e.g. Castlegar, Coolagh, Dangan/Bushypark and Bearna

Further design iterations were necessary to minimise and reduce the extent of the impacts on the residential communities; this process formed part of the *Phase 3 Design* work.

Full details of this consultation and submissions received from the public are contained in **Appendix A.1.3**.

1.4.1.4 Public Display of Design of the proposed road development

A public display to provide an update on the design development of the N6 Galway City Ring Road was held in both Galway County and City Council Offices during normal working hours Monday to Friday from the 14 November to 2 December 2016.

General feedback on the proposed design included queries on the project's planning process and specific requests from landowners for design changes in the vicinity of their property to better mitigate the impact of the proposed road development. This is further detailed in **Chapter 4, Alternatives Considered**.

1.4.1.5 Continuous public consultation

A project website was created and used to keep the public informed at all stages as the N6 GCRR project progressed.

Over 950 individual property owner meetings, including many home visits, took place between the design team and property owners and such consultation informed the design of the proposed road development and the environmental impact assessment.

All property owners identified as owning lands to be acquired to facilitate the construction of the proposed road development received written correspondence in October 2016 with a copy of the design with respect to their property. As part of the final consultation process, written communication was issued to all property owners again in May 2018 with a copy of the final design with respect to their property and an explanation of the next steps.

1.5 Difficulties Encountered during the Study

No significant difficulties were encountered during the preparation of this EIAR. Any technical limitations associated with assessment of an environmental aspect are detailed in the relevant EIAR chapter.

1.6 References

Environmental Protection Agency. (2017) *Draft Guidelines of the Information to be contained in Environmental Impact Assessment Reports, 2017.*

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