

Appendix 1.1

EIA Team Competencies

EIA Team Competencies

The Table below provides competency details on the all personnel and firms who provided significant inputs to the EIAR. Arup was responsible for the overall delivery of the EIAR for the proposed Arklow Flood Relief Scheme with assistance from a number of external experts on specialist topics. The overall EIAR authors are detailed first. Competency details of the authors for specialist chapters or surveys are also provided. Byrne Looby were responsible for the scheme design. BSM were responsible for the public realm design and landscaping strategy.

Topic	Competency Summary
Project Management and Coordination	
EIAR Project Manager	<p>Fiona Patterson - Arup MSc, BSc, DipFEcol, AdvDip Planning & Env Law Responsibility: EIAR Project Management</p> <p>Fiona Patterson has over 19 years' experience as an Environmental Consultant, based in the Arup Cork office. She holds an honours degree (BSc.) Earth Science, University College Cork (1997), a masters degree (M.Sc) Environmental Engineering, Queens University Belfast (1998) and a diploma (DipField Ecol) Field Ecology, University College Cork (2016) and an Advanced Diploma in Planning and Environmental Law with Kings Inns (2018) . She is an Affiliate Member of the Institute of Environmental Management & Assessment (IEMA).</p> <p>Since 2000, Fiona has prepared, or coordinated the preparation of numerous environmental impact statements (EIS/EIARs) for a wide range of industrial, infrastructure, institutional, commercial and residential projects.</p> <p>Fiona primarily manages the environmental aspects of major projects through the planning process including EIA scoping and EIA screening, environmental constraints and route/site options analysis, Environmental Impact Assessment Reports (EIAR/EIS) and Appropriate Assessment (AA). Fiona also manages the preparation of environmental audits, industrial licencing reports and environmental due diligence reports. Fiona has prepared numerous chapters of EIARs and has coordinated and delivered many EIAR/EISs for infrastructural developments including M20 Cork to Limerick Motorway, Douglas Flood Relief Scheme, Glashaboy River (Glanmire/Sallybrook) Drainage Scheme, Indaver Ringaskiddy Resource Recovery Centre, Blanchardstown Regional Drainage Scheme and Shannon LNG Terminal. Fiona has presented expert witness evidence at the An Bord Pleanála oral hearings.</p>
EIAR Coordinator	<p>Ailsa Doyle – Arup BSc (M.Sc. ongoing) Responsibility: EIAR Coordination</p> <p>Ailsa is an Environmental Consultant in the Arup Dublin office with over 6 years' experience in the environmental sector. Ailsa graduated from TU Dublin in 2015 with a First-Class Honours (B.Sc.) Degree in Environmental Management and is currently undertaking an M.Sc. in Planning and Urban Leadership with the University of the West of England.</p> <p>Ailsa has experience preparing and coordinating EIARs in a number of areas including residential/commercial developments, public realm and industrial/manufacturing. Relevant projects include the Parkgate St. Project EIAR, Pfizer Proposed Building 3C-2 Development EIAR, College Green Project EIAR,</p>

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	Ticknick Park EIAR and the Arklow Wastewater Treatment Plant EIAR. Ailsa has also developed a specialisation in Strategic Environment Assessment and has carried out a range of SEA's to date for a multitude of plans and programmes.
EIAR Peer Reviewer	<p>Ria Lyden – Arup BE, MBA, CEng, FIEI, MStructE Responsibility- Peer Review of EIAR</p> <p>Ria is currently a Consultant and Strategic Advisor with Arup. She has over 40 years' experience in engineering design and construction in Ireland, the United Kingdom and Australia. Ria has significant experience in environmental engineering, EIA, AA and environmental due diligence audits as well as providing strategic advice to clients on planning, permitting and liaison with the Regulatory Authorities. Ria has worked on numerous large-scale infrastructure developments including Shannon LNG, Kinsale Area Decommissioning Project, Greenlink Interconnector, Apple Data Centre and Indaver Resource Recovery Centre. She has prepared, or supervised the preparation of, numerous EISs and EIARs over 25 years.</p>
Project Director (EIAR)	<p>Clodagh O'Donovan BE, MEngSc (Water Engineering), CEng, FIEI, FConsEI Responsibility – Project Director (EIAR)</p> <p>Clodagh is a chartered civil engineer, with over 25 years' experience in engineering consultancy. As Planning Service Team Lead for Arup Ireland, Clodagh has direct responsibility for both the overall planning and environmental teams and the projects that the team undertakes. She has significant experience in the management and delivery of complex, multidisciplinary projects. She has specialist knowledge in the energy sector, having led a wide range of such projects throughout her career. She has been involved in these projects from inception to completion, and has particular experience in EIA, regulatory consent and stakeholder consultation.</p>
Project Director (Engineering)	<p>Kieran Thornton – Byrne Looby B.Eng (Civil)., Dip. Mech. Eng., H.Dip. Env. Eng. Responsibility: Project Director- Engineering</p> <p>Kieran is a Civil and Environmental Engineer with over 38 years' experience in his field with particular expertise in the project management of feasibility studies, preliminary reports, contract documents, procurement and the construction of water, wastewater and flood relief schemes. This includes expertise in hydrological and hydrogeological studies.</p> <p>Kieran holds an honours degree in Civil Engineering from University College Cork (1980), a Diploma in Mechanical Engineering (1981) and a Higher Diploma in Environmental Engineering (1995).</p> <p>Kieran has undertaken the role of Project Director and Project Manager on a number of flood relief schemes and flood risk assessments in Ireland including:</p> <ul style="list-style-type: none"> • Bandon Flood Relief Scheme, Co. Cork • Ballyvolane Flood Risk Assessment and Management Plan, Cork City • Bon Secours Flood Risk Assessment, Cork City • Carrick-on-Suir Flood Relief Scheme, Co. Tipperary • Carrigtohill Flood Mitigation Measures, Co. Cork • Clonmel Flood Relief Scheme, Co. Tipperary

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	<ul style="list-style-type: none"> • Curraheen Flood Relief Scheme, Co. Cork • Ennis Flood Relief Scheme, Co. Clare • Fíor Uisce Flood Relief Scheme, Co. Clare • Flood Protection at Scotch Quay, Waterford • Glen, Bride and Kiln River Flood Study, Cork City • Howth Flood Relief Scheme, Co. Dublin • River Bride and River Brouen (Crookstown) Flood Risk Assessment and Management, Co. Cork • Springfield Flood Relief Scheme, Co. Clare • The Glen (Passage West) Flood Relief Scheme, Co. Cork <p>Other relevant experience includes managing the preparation of Environmental Impact Statements for Mallow Flood Relief Scheme, Clonakilty Waste Water Treatment Plant and Kenmare Waste Water Treatment Plant and Natura Impact Statements for Freshford Waste Water Treatment Plant (WWTP), Ballycotton WWTP, Springfield Flood Relief Scheme, Carrigtohill Flood Mitigation Measures and Saleen Integrated Constructed Wetlands. Kieran has also managed AA Screening Reports, EIA Screening reports, Ecological Impact Assessments, Archaeological Impact Assessments and Environmental Reports for a wide range of projects in the areas of flood risk management, drinking water supplies and waste water schemes. He has been called as expert witness for oral hearings for planning and compulsory purchase orders.</p>
Senior Engineer	<p>Kagiso Selaledi- Byrne Looby MSc Project Management, BEng. Civil Responsibility: Coordination of Engineering Inputs</p> <p>Kagiso is Senior Project Engineer in the ByrneLooby, Cork office with has over 8 years' experience in the civil engineering sector. Kagiso holds a Master of Science in Project Management (2020) and Bachelor of Engineering Degree in Civil Engineering (2012). He is a member of Engineers Ireland and currently working towards Chartership.</p> <p>Kagiso's involvement in engineering projects includes feasibility stage design for flood relief schemes, design and construction of water supply pipelines, water and wastewater treatment plants and stormwater drainage networks. He has prepared construction methodologies, preliminary design drawings and technical specifications for various drainage schemes. Relevant flood relief schemes and flood risk assessments as a Senior Project Engineer in Ireland include:</p> <ul style="list-style-type: none"> • Ballyvolane Housing Development Flood Risk Assessment, Co. Cork • Aperee Living Tralee Flood Risk Assessment, Co. Kerry • Carrigtohill Flood Mitigation Measures, Co. Cork • River Dodder Flood Relief Scheme, Co. Dublin
Chapter 2- Background and Need for the Scheme Chapter 17- Material Assets	<p>Marc Devereux BE (Civil) NUI, Dip Env Eng TCD, MIEI – Senior Engineer Wicklow County Council Responsibility: Senior Engineer in Wicklow County Council Environment Department</p> <p>Marc has a Bachelor of Engineering degree from UCD (1990) and a Graduate Diploma in Environmental Engineering from Trinity College Dublin (1992). Marc worked in Design and Construction Management of Sanitary Services Schemes in Engineering Consultants offices from Graduation until 1998. He joined Wicklow County Council in 1998 and worked as a project manager on National Roads Schemes as Executive Engineer (up to 2001), Senior Executive Engineer up to 2003, and Senior Engineer from 2003 until 2006 (managing the Road Design office with projects of up to €192M), when he took over as Senior Engineer in Housing (managing maintenance of over 4,000 houses, and construction of up to 300 houses). In 2010, he was appointed Town Engineer (Senior Engineer) in Bray Town Council as</p>

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	senior technical advisor for a town with a population of 30,000. Responsibilities included Roads, Environment, Water and Sewers, Housing (1,250 houses) and Planning. He project managed the River Dargle Flood Defense Scheme to completion in 2017. In 2015, on the dissolution of Bray Town Council, Marc was transferred to Environment, where he now has responsibility for Waste Management, Harbours, Pollution Control and Flood Risk Management.
Front End Chapters	
Chapter 1 - Introduction	Fiona Patterson and Ailsa Doyle – Arup As Above Responsibility- Preparation of Chapter 1
Chapter 2 - Need for the Scheme	Kieran Thornton - Byrne Looby, Marc Devereux - WCC, Fiona Patterson and Ailsa Doyle – Arup, As Above Responsibility- Preparation of Chapter 2
Chapter 3- Alternatives	Kieran Thornton - Byrne Looby and Fiona Patterson – Arup, As Above Responsibility- Preparation of Chapter 3
Chapter 4 - Description of the Proposed Development	Kieran Thornton and Kagiso Seladi- Byrne Looby As Above Responsibility- Preparation of Chapter 4
Chapter 5 - Construction Strategy	Kieran Thornton and Kagiso Seladi- Byrne Looby As Above Responsibility- Preparation of Chapter 5
Chapter 6 - Planning and Policy	Fiona Patterson and Ailsa Doyle- Arup As Above Responsibility- Preparation of Chapter 6
Specialist Chapters	
Chapter 7- Traffic and Transport	Tony Lynch- Arup BE, MEngSc Responsibility: Undertaking of traffic and transport impact assessment and preparation of Chapter 7 of EIAR. Tony is a Chartered Engineer with Engineers Ireland and a Member of the Chartered Institute of Highways and Transportation (United Kingdom). He has over 20 years' experience in the preparation of traffic and transportation assessments for a large number of developments including major infrastructural projects, including the New Children's Hospital at St James's Hospital, the Arklow Wastewater Treatment Plant and the Intel Manufacturing Facility at Leixlip, Co. Kildare. Tony is an Associate Director with Arup and is the transport planning lead in Ireland.
Chapter 8-Air Quality and Odour	Sinead Whyte - Arup BSc, MSc, CMIWEM Responsibility: Undertaking of air quality and odour impact assessment and preparation of Chapter 8 of EIAR.

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	<p>Sinead Whyte is a highly experienced Environmental Consultant with over 22 years' experience. She holds an MSc in Experimental Physics and is Chartered for over 15 years with the Institute of Water and Environmental Management. She is an Associate Member of the Institute of Acoustics. Sinead has prepared numerous Air Quality, Odour and Climate Impact Assessments for major infrastructural developments including DART Underground, M20 Cork to Limerick Motorway, M7 Osberstown Interchange and R407 Sallins Bypass, N9/N10 Kilcullen to Powerstown, Arklow Wastewater Treatment Plant and Glashaboy River (Glanmire/Sallybrook) Drainage Scheme. Sinead presented expert witness evidence at the An Bord Pleanála oral hearings into these developments. She has prepared numerous Noise and Vibration impact assessments for a variety of developments. Recently, she presented expert witness evidence on Air Quality and Climate and Noise and Vibration at two oral hearings for Irish Cement.</p> <p>Cormac McKenna- Arup BSc, M.Sc, Dip Acoustics Responsibility: Undertaking of air quality and odour impact assessment and preparation of Chapter 8 of EIAR.</p> <p>Cormac holds a BEng in Civil Engineering, MSc in Environmental Engineering and has over 7 years' experience working in the Environmental Consulting group in Arup. Cormac has specialist expertise in noise modelling, air and odour dispersion modelling and has contributed to a range of Environmental Impact Assessments and Industrial Emissions licence applications for major projects including Arklow Wastewater Treatment Plant (air quality, climate, noise & vibration, odour), Irish Cement Alternative Fuels Project (air quality, climate, noise & vibration) and Carin Homes Cherrywood (noise & vibration). In 2020, Cormac completed a Diploma in Acoustics and Noise Control from the Institute of Acoustics.</p>
Chapter 9 - Noise and Vibration	<p>Sinead Whyte and Cormac McKenna- Arup As Above Responsibility: Undertaking of noise and vibration impact assessment and preparation of Chapter 9 of EIAR.</p>
Chapter 10 – Biodiversity	<p>Dr Brendan O'Connor BSc PhD MCIEMM- AQUAFAC International Services Ltd. (AQUAFAC)</p> <p>Responsibility: Undertaking of biodiversity impact assessment and preparation of Chapter 10 of EIAR.</p> <p>Brendan has been Managing Director of AQUAFAC since 1986. He has 40 years of experience in the field of marine and terrestrial ecology and has published ca 85 scientific papers and numerous reports specialising in the biology and ecology of sea-floor communities. Brendan holds a PhD from University College Galway (UCG) and is a full member of the Chartered Institute of Ecology and Environmental Management. He was formerly Assistant Director, of the Benthos Research Group at UCG and was a member of the board of the Marine Institute.</p> <p>Brendan is an internationally recognised expert polychaete taxonomist and has led numerous international workshops in polychaete taxonomy including workshops as part of the UK BEQUALM/NMBAQC. He has 33 publications on marine invertebrate taxa including descriptions of new species, revisions of families and additions to the European and Irish fauna.</p> <p>As Managing Director of AQUAFAC Brendan has been responsible for all aspects of management including the design, execution and reporting of ecological surveys to inform impact assessment reports for a wide range of large scale developments including harbour extensions, flood relief projects, energy infrastructure developments, onshore and offshore wind farms. This body of work includes the delivery of assessments to meet the provisions of the Habitats Directive (HD) and Environment Impact Assessment (EIA) Directive.</p>

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	<p>Brendan's has provided expert input on biodiversity delivery of terrestrial and marine biodiversity fieldwork and assessments for Galway Harbour Extension EIA Report. This large scale projects is the first full scale Article 6.4 of the EU Habitats Directive IROPI (Imperative Reasons of Overriding Public Interest) case completed in Ireland and Brendan developed and wrote the Compensatory Measures Report for the project. This required liaising with DG Environment and regular meetings with both An Bórd Pleanála and the National Parks and Wildlife Service (NPWS).</p> <p>Brendan formed part of the AQUAFAC team that managed the delivery of EIAR for a large scale offshore wind farm in the outer part of Dundalk Bay, Co. Louth. For the EIAR, Brendan provide expert input to the biodiversity chapter of the EIAR and wrote that element of the report. Fieldwork undertaken by Brendan included monthly intertidal bird surveys at the proposed landfall site for the onshore cable route.</p> <p>Dr James Forde BSc MSc PhD MCIEMM- AQUAFAC International Services Ltd. (AQUAFAC) Responsibility: Undertaking of biodiversity impact assessment and preparation of Chapter 10 of EIAR.</p> <p>James has a PhD in Marine Ecology and is a full member of the Chartered Institute of Ecology and Environmental Management. James has over fifteen years' experience in marine research and environmental consultancy. James specialises in marine ecology and has a full appreciation of the objectives and mechanisms of national and international environmental legislation and policy.</p> <p>James' research has focused on shellfish production and its effects on benthic habitats and communities, and techniques used to assess ecological impacts under European environmental legislation including the Habitats Directive (HD) and the Water Framework Directive (WFD).</p> <p>As part of James' consultancy work he has delivered assessment reports to meet the provisions of the HD and EIA Directive to accompany planning applications for a wide range of developments (e.g. pier enhancement projects, coastal defence projects, aquaculture). Of particular relevance to the Arklow FRS is James' specialist input on biodiversity for the Dunkellin River and Aggard Stream FRS, and with Galway City FRS.</p> <p>James formed part of the technical advisory team for the national implementation of the MSFD. James was responsible for specialist input on biodiversity.</p> <p>James was a member of the International Union for Conservation of Nature (IUCN) expert working group for marine red-list habitats for the North Atlantic and has collaborated with international experts on the designation of sensitive marine habitats including <i>Ostrea edulis</i> beds, <i>Mytilus edulis</i> beds, intertidal seagrass meadows and offshore <i>Lophelia pertusa</i> reef habitats.</p> <p>James has collaborated with national experts on the assessment of deep water reef habitats in Irish waters to support Ireland's national assessment of reef as required under Article 17 of the Habitats Directive. Recently James has also worked with national experts on the classification of lagoons, a HD Annex I priority habitat.</p> <p>James has also collaborating with NUIG academics on a Science Foundation Ireland (SFI) funded research project focused on the development of decision support tools related to the implementation of the European MSP and the development of marine resources in Ireland.</p> <p>Brian Keeley B.Sc Responsibility: Undertaking of Bat surveys and preparation of Bat Derogation Licence</p> <p>Brian is a a highly experienced independent ecologist, with over 20 years' experience. He holds an Honours degree in Zoology from UCD and sits on the Heritage Council bat expert panel. He is a full member of the Chartered Institute of Ecology & Environmental Management, an organisation requiring peer-review for membership and a high standard of professional conduct. Brian was responsible for preparing the Bat Derogation Licence application and carrying out bat surveys</p>
Chapter 11- Archaeology, Architectural	<p>Lisa Courtney BA MSc (Ag) Dipl. Bus. Mgt, Adv. Dip Planning & Env Law MIAI. Courtney Deery Heritage Consultancy Ltd</p>

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and Cultural Heritage	<p>Responsibility: Undertaking of archaeology, architecture and cultural heritage impact assessment and preparation of Chapter 11 of EIAR.</p> <p>Lisa is a director of Courtney Deery Heritage Consultancy and has over 25 years of field and research experience in environmental impact assessment reporting. Lisa holds a BA (Hons) in Archaeology and Economics and a Msc (Ag) in Environmental Resource Management from University College Dublin and has obtained certificates from the University of Oxford in Condition Surveys of Historic Buildings (2017) and the assessment of setting of heritage assets (2013). Lisa holds a higher diploma in Planning and Environmental Law (2020). Lisa is a member of the Institute of Archaeologists of Ireland (IAI) and a member of the International Council of Monuments and Places (ICOMOS). Lisa has carried out reports for large scale infrastructural projects and conservation initiatives, her experience demonstrates a capability of characterising the existing historic and archaeological environment and evaluating its significance. Lisa has produced many archaeological, architectural and cultural heritage impact assessments for EIAR purposes including N5 Ballaghaderreen to Scramoge Road Project, the Metro North Options Study and the Corrib gas pipeline. Lisa has also produced the Guidelines for the Assessment of Archaeological Heritage Impact of National Road Schemes, the Cultural Heritage Evidence Base Study of Existing Transmission Grid Infrastructure and Cultural Heritage Guidelines for Electricity Transmission Projects. Lisa was the lead author of Chapter 11-Archaeology, Architectural and Cultural Heritage.</p> <p>Niall Brady- The Archaeological Diving Company Ltd (ADCO) BA, MA, PhD, FSA Responsibility: Undertaking of underwater archaeology impact assessment and preparation of report on survey findings. Input to Chapter 11- Archaeology, Architectural and Cultural Heritage</p> <p>A graduate of UCD (1983, 1986) and Cornell University (1996), and co-founder of ADCO Ltd, Niall has over 20 years of experience in marine and related archaeological projects in Ireland and abroad. Niall has a proven research background, having been project director for the Discovery Programme, Ireland's institute for advanced archaeological research, where he designed and implemented the Medieval Rural Settlement Project (2002-10). Niall has also carried out a large number of excavations and monitoring projects on land and underwater. He has extensive experience in contributing to Environmental Impact Assessments and has been involved in the Corrib Onshore Pipeline project 2010; the Port of Cork Ringaskiddy Redevelopment project 2015, and Dublin Port Company's Alexandra Basin Redevelopment project 2015 and its MP2 project in 2019. Niall also sits on several international committees, including the Society for Medieval Archaeology (Newsletter Editor); the Royal Society of Antiquaries of Ireland (Honorary Editor) and Ruralia.</p> <p>Lisa Edden B.Eng., C.Eng., M.I.Struct.E., M.I.E.I Responsibility: Conservation Engineering and input to architectural heritage impact assessment. Preparation of report on assessment findings.</p> <p>Lisa is a consulting structural engineer with over 20 years' experience. Lisa graduated from Bristol University with an honour's degree in Civil Engineering and became a chartered member of the Institute of Structural Engineers in 1990. Lisa set up as a sole practitioner in 1998. Since then., Lisa has been involved in the structural engineering aspects of the repair and re-use of numerous vernacular and historic buildings as well as the assessment of many ruinous structures. Lisa designs structural solutions for the repair and stabilisation of buildings of traditional form.</p>
Chapter 12 - Landscape and Visual	<p>John Kelly, Architect and Managing Partner, Brady Shipman Martin B.Arch. Responsibility: Undertaking of landscape and visual assessment and preparation of Chapter 12 of EIAR and development of public realm proposals.</p>

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	<p>John Kelly is Managing Partner of Brady Shipman Martin and has over twenty five years' experience in a multi-disciplinary environment covering strategic planning and design, detailed design and environmental assessment. John project manages and collaborates with multi-disciplinary teams of professionals working on a wide range of projects types and scales in the built environment.</p> <p>John's particular expertise is in strategic planning and design, preparation of site development strategies that optimise development potential and in environmental assessment. He has had direct involvement in the planning and design of large scale mixed-use master plans, as well as major infrastructure, industrial, educational, commercial, tourism and energy projects. John graduated from University College Dublin in 1991 with a bachelor's degree in architecture.</p> <p>John was responsible for the overall delivery of Chapter 12 of the EIAR in addition to development and coordination of the public realm design (Appendix 4.2) and photomontages (Appendix 12.1).</p> <p>Julia Vavilova, Landscape Architect and Urban Planner, Brady Shipman Martin B. L. Arch. Responsibility: Landscape design and public realm drawings preparation Julia Vavilova is a Landscape Architect with over 10 years' experience working in multi-disciplinary design practices delivering projects in the built and natural environment. Julia has experience collaborating with multi-disciplinary teams and has worked at all levels and scales in both architecture and landscape architecture, including masterplanning, urban design, concept design, detailed and construction design and delivery stages.</p> <p>Rafal Nieznalski, Senior Urban Designer and Architect, Brady Shipman Martin M.Sc. Architect, Engineer, Diploma in Architecture and Urban Planning (1997-2002) Responsibility: Landscape design and public realm drawings preparation</p> <p>Rafal Nieznalski is a Senior Urban Designer / Architect with particular interest and experience in master planning and urban design at all scales of development including town plans, urban framework plans, streetscape design and public realm. A key characteristic of his workflow is collaboration with other disciplines including civil, structural and transport engineers as well as environmental and other design professionals. He has worked on a wide range of projects, including public realm design, tourism masterplanning, integrated infrastructural, transport, industrial and urban mixed use development. Rafal has extensive experience in designing and working in 'live' and constrained streetscape environments and public spaces to deliver successful and attractive places. He is also passionate about incorporating the principles of Universal Access as a key success factor in his work.</p>
Chapter 13- Land and Soils	<p>Kieran Thornton and Kagiso Seladi – Byrne Looby As Above Responsibility: Undertaking of land and soils impact assessment and preparation of Chapter 13 of EIAR.</p> <p>Rhian Llewellyn- ByrneLooby MGeol, PhD Responsibility: Undertaking of land and soils impact assessment and preparation of Chapter 13 of EIAR.</p>

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	<p>Rhian has over 5 years' experience in the environmental sector and over 10 years' experience as a Geologist. She holds a Master of Geology degree and a PhD in Earth Sciences; she is a member of the Institute of Environmental Management and Assessment (IEMA) and currently working towards Practitioner status. Rhian has prepared the geology, land, soils, surface water and groundwater chapters of several international EIAs, including for lender-funded projects and large infrastructure projects in the Energy Sector and currently manages/coordinates the environmental input to Constraints Studies, EIA Screening reports, EIA Scoping Reports and EIA reports for flood relief projects in Dublin and Kilkenny.</p>
Chapter 14 – Water	<p>Kieran Thornton, Rhian Llewellyn and Kagiso Seladi – Byrne Looby As Above Responsibility: Undertaking of water impact assessment and preparation of Chapter 14 of EIAR.</p>
Chapter 15 – Resource and Waste Management	<p>Janet Lynch- Arup BE, FETAC Certificate Responsibility: Undertaking of resource and waste impact assessment and preparation of Chapter 15 of EIAR.</p> <p>Janet is a Chartered Engineer with over 20 years experience in preparing construction and operational resource and waste management assessments for EIA. Relevant projects include: Montrose Residential Development, Dublin; City Strand Masterplan and Phase 1 Development, Dublin; Wilton Plaza Masterplan, Dublin; Griffith Avenue Residential Development, Dublin; Stryker Springhill Expansion, Cork; N6 Galway City Bypass, Galway; Oberstown Detention Campus, Co. Dublin and Trinity College Biosciences Building, Dublin.</p> <p>Simon Grennan- Arup BA, MSc. Responsibility: Undertaking of resource and waste impact assessment and preparation of Chapter 15 of EIAR.</p> <p>Simon is an Environmental Consultant in the Arup Dublin office with over 6 years' experience in the environmental sector. Simon holds an MSc in Environmental Sciences from Trinity College Dublin. Simon has a wide range of experience in the environmental field, with specific experience in EIA coordination and preparation and waste management consultancy work. Simon has successfully delivered Construction & Demolition and Operational Waste Management Plans for several high-profile building projects, while he has also prepared a number of waste facility permit and licence applications for various industrial facilities. Relevant projects include: City Strand Masterplan and Phase 1 Development, Dublin; Wilton Plaza Masterplan, Dublin; Blakes Mixed Use Development, Dublin; Former Ford Distributions Site Mixed Use Development, Cork; TCD E3 Learning Foundry, Dublin, Townsend Street Mixed Use Development, Dublin and Roadstone, Belgard Quarry Waste Recovery Facility, Dublin.</p> <p>Sean Mason -Arup BA, BAI, MSc, CEng, FIEI, MASCE Responsibility: Undertaking of dredge material management study and preparation of report (Appendix 15.2) on findings.</p> <p>Sean holds a Bachelor of Civil Engineering Degree from TCD (1981) and a Master's Degree in Geotechnical Engineering from the Ohio State University, USA (1982). Sean has 38 years' experience as a consulting civil/geotechnical engineer, 34 with Arup, and is Director in charge of Arup Ireland's Ground Engineering team. Sean also established Arup Ireland's Maritime Engineering group in 2009.</p>

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	<p>Sean is a leading expert in ground engineering and its application to the built and natural environment, including geotechnical engineering, geology, hydrogeology and contaminated land. Sean has vast experience on projects through all stages of development from concept to operation, across a wide range of sectors including transport, water, maritime, energy and urban development. Sean has particular interest in the application of sustainability and circular economy principles to the ground engineering aspects of projects.</p> <p>Sean has been project director and geotechnical leader on many major projects in Ireland and has provided expert witness evidence at many public oral hearings.</p> <p>Eoin Wyse- Arup BSc, PGeo, EurGeol Responsibility: Undertaking of dredge material management study and preparation of report (Appendix 15.2) on findings.</p> <p>Eoin Wyse holds a degree in Environmental Geochemistry from University College Dublin (2000). He is a Professional Geologist (PGeo) with the Institute of Geologists of Ireland and a Chartered European Geologist (EurGeol) with the European Federation of Geologists.</p> <p>Eoin is currently an Executive board member of the Institute of Geologists of Ireland since 2018, acting as their Executive Secretary. He is on the IGI Pyrite Panel of Experts and is a member of the IGI Register of Professional Qualified Geoscientists/Competent persons (in respect of environmental risk assessment for regulated and unregulated waste disposal and contaminated land) since 2015.</p> <p>Eoin is currently employed as a Senior Engineering Geologist in Arup and has sixteen years professional engineering experience in the design and construction of large building projects and also in the geo-environmental assessment of contaminated land. In his role as a senior engineering geologist he has also been responsible for the preparation of a number of Land and Soils chapters for Environmental Impact Assessment Reports (EIAR).</p> <p>Joshua Reilly- Arup B.Eng, Dip CL. Responsibility: Undertaking of dredge material management study and preparation of report (Appendix 15.2) on findings. Joshua is an experienced Maritime Senior Engineer with over ten years' experience and a demonstrated history of working in the design industry.</p> <p>Since joining Arup, Joshua has worked on a number of multidisciplinary infrastructure projects, where he has developed his knowledge of the design aspects of Civil and Maritime Engineering, in particular structural design. Joshua is skilled in the use of many engineering software packages, including AutoCAD, ArcGIS, HEC-RAS, ISIS, Microsoft software and MIKE modelling tools.</p> <p>Joshua has recently carried out wave climate and sediment transport assessments for a number of sites using different modelling software including MIKE 21 and CEDAS SBEACH. Joshua has also previously worked on detailed design of breakwaters, revetments and pier structures as well as structural analysis and overtopping assessments of existing</p>

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<p>Chapter 16- Population and Human Health</p>	<p>Craig Bullock-Optimize PhD (Environmental economics, UCD 2004), Dip (EIA, UCD 2000). Responsibility: Undertaking of population impact assessment and preparation of Chapter 16 of EIAR.</p> <p>Craig has over 20 experience of working on the Human Beings (Population) or socio-economic assessments of infrastructure developments, including 35 national road schemes, public transport, flood relief, wastewater, built development, golf courses and greenways, for EIA and SEA. Other consultancy and academic expertise in cost benefit analysis, recreation planning, climate change adaptation and social aspects of biodiversity and ecosystem services.</p> <p>Dr. Martin Hogan Responsibility: Undertaking of human health impact assessment and preparation of Chapter 16 of EIAR.</p> <p>Dr Martin Hogan in a full time Occupational Physician since 1994 working full time in industry. He is a Director of EHA Ltd. and a founding Partner of Corporate Health Ireland (CHI) He is a Fellow of the Royal College of Physicians of Ireland and a Fellow of Faculty of Occupational Medicine of the Royal College of Physicians of Ireland.</p> <p>He is a specialist trainer and an examiner for the Faculty of Occupational Medicine of the Royal College of Physicians of Ireland and a former National Speciality Director in Occupational Medicine. He is a past Dean of the Faculty of Occupational Medicine of the Royal College of Physicians of Ireland. He is a Board Member for the International Commission of Occupational Health. He is the President of the Organising Committee for ICOH 2018 to be held in Dublin.</p> <p>He is a member of the Board of Medichem which is the international scientific association for Occupational and Environmental Health in the production and use of chemicals. He has a special interest in Toxicology and Environmental Medicine. He lectures in Occupational Medicine and Toxicology in University College Cork.</p>
<p>Chapter 17 - Material Assets</p>	<p>Marc Devereux – WCC, Fiona Patterson and Ailsa Doyle– Arup As Above Responsibility: Undertaking of material assets impact assessment and preparation of Chapter 17 of EIAR.</p>
<p>Chapter 18 – Major Accidents and Disasters</p>	<p>Fiona Patterson and Ailsa Doyle– Arup As Above Responsibility: Undertaking of major accidents and disasters impact assessment and preparation of Chapter 18 of EIAR.</p>
<p>Chapter 19- Climate</p>	<p>Sinead Whyte and Cormac McKenna-Arup As Above Responsibility: Undertaking of climate impact assessment and preparation of Chapter 19 of EIAR.</p>
<p>Chapter 20 – Cumulative Effects and Interactions</p>	<p>Fiona Patterson and Ailsa Doyle- Arup As Above Responsibility: Preparation of Chapter 20 of EIAR.</p>

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Chapter 21- Summary of Mitigation Measures	Fiona Patterson and Ailsa Doyle- Arup As Above Responsibility: Preparation of Chapter 21 of EIAR.