



Chapter 01
Introduction

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1. Introduction

1.1 Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared in respect of the Lucan to City Centre Core Bus Corridor Scheme (hereinafter referred to as the “Proposed Scheme”).

The Proposed Scheme comprises infrastructure improvements for active travel (both walking and cycling), and the provision of enhanced bus priority measures for existing (both public and private) and future service users, in a manner which is consistent with, and will help attain, sustainable transport policies and objectives.

This Chapter of the EIAR introduces the Proposed Scheme, summarises the Environmental Impact Assessment (EIA) process, describes the methodology used to prepare this EIAR and outlines the consultation activities that have been carried out to date.

The route of the Proposed Scheme is presented in Image 1.1.

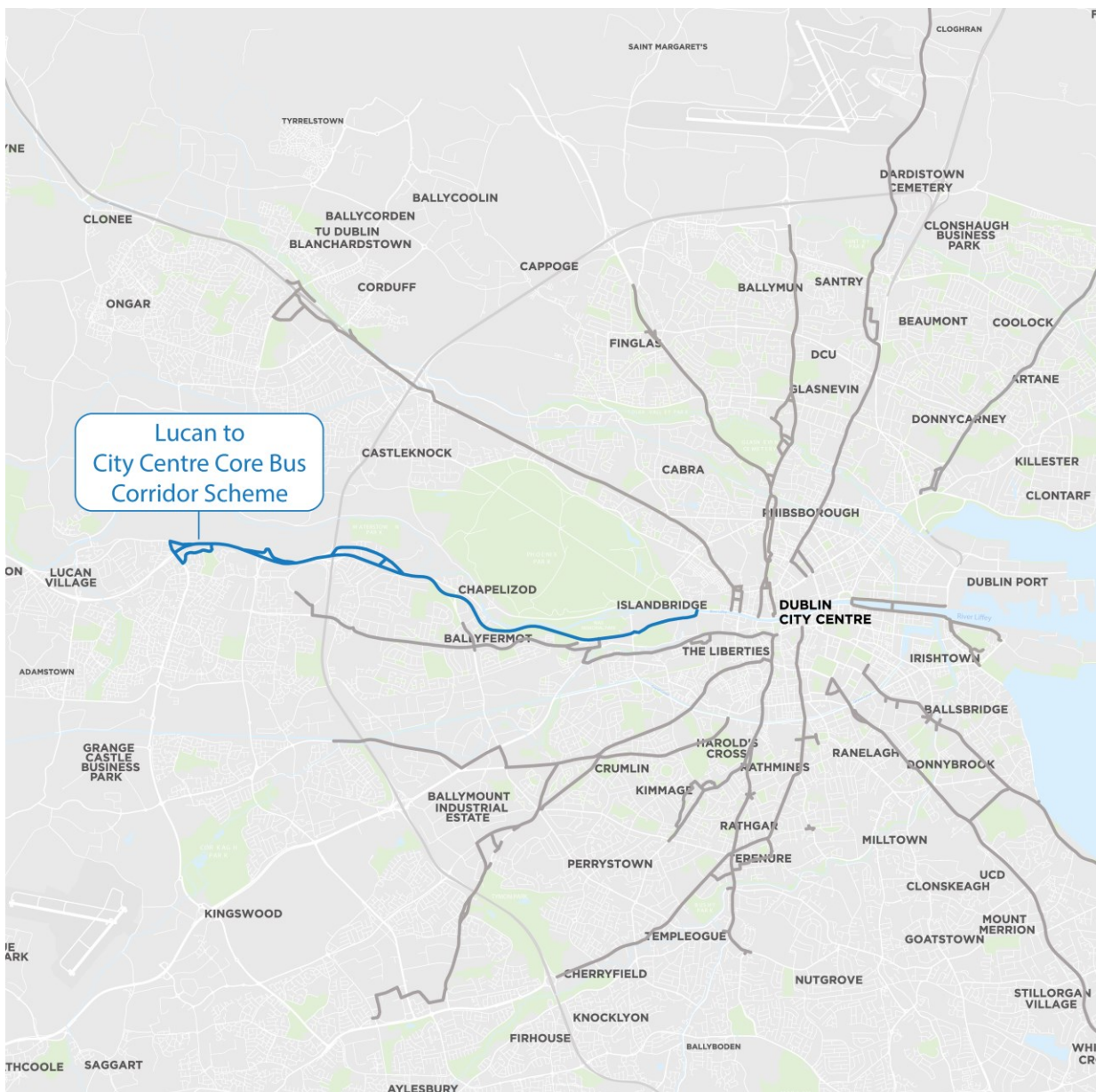


Image 1.1: Route of the Proposed Scheme

The Proposed Scheme, which measures approximately 9.7km and commences at Junction 3 on the N4. It is routed via the N4 as far as Junction 7 (M50), and via the R148 along the Palmerstown Bypass, Chapelizod Bypass, Con Colbert Road and St John's Road West as far as Frank Sherwin Bridge, where it will join the prevailing traffic management regime on the South Quays.

The Proposed Scheme will significantly enhance travel by public transport by providing bus priority as well as improved pedestrian and cycling infrastructure on the N4 and R148 to and from the City Centre. Currently this key access corridor is characterised by traffic congestion and discontinuous inadequate bus and cycling infrastructure, meaning that for most of the journey, buses and cyclists are competing for space with the general traffic, impacting on the attractiveness for pedestrians, cyclists and bus users of these sustainable transport modes.

The Proposed Scheme will improve both the overall journey times for buses along the route and their journey time reliability, by providing increased bus priority infrastructure. The result will be increased journey reliability, by largely removing interaction between bus traffic and general traffic, thereby delivering significant benefits to the travelling public and to the environment.

In addition to the improvements to bus journey times and journey time reliability, the Proposed Scheme will provide significant benefits for cyclists and pedestrians. The scheme design has been developed having regard to the relevant accessibility guidance and universal design principles so as to provide access for all users. The Proposed Scheme will provide improved pedestrian crossing facilities along the route, with an increase in the number of signalised crossing points, and the provision of side road ramps.

The provision of dedicated cycling infrastructure along the Proposed Scheme will improve the level of service provided for cyclists along the route, making cycling trips safer and more attractive. In this regard, the Proposed Scheme delivers substantial elements of the National Transport Authority (NTA) Greater Dublin Area Cycle Network Plan (hereinafter referred to as the GDA Cycle Network Plan, NTA 2013), much of which does not currently have adequate provision - as well as linking with other existing and proposed cycling schemes and sustainable transport modes, contributing towards the development of a comprehensive cycling network for Dublin.

Cycle facilities are provided at Junction 3 of the N4, along R136 Ballyowen Road between Hermitage Road and the R835 Lucan Road, and then along the length of the Core Bus Corridor to Junction 2 of the N4. From there cycle facilities are provided along the Old Lucan Road either side of the M50 and through Palmerstown village, to the start of the R148 Chapelizod bypass, at which point they will connect with other future cycle facilities through Chapelizod village. Cycle facilities are also provided on the R148 between Con Colbert Road and the end of the corridor at Heuston station on St John's Road West.

Several urban realm upgrades, including widened footpaths, high quality hard and soft landscaping and street furniture will be provided in areas of high activity, which will contribute towards a safer, more attractive environment for pedestrians.

The primary objective of the Proposed Scheme, therefore, is the facilitation of modal shift from car dependency through the provision of walking, cycle, and bus infrastructure enhancements thereby contributing to an efficient, integrated transport system and facilitating a shift to a low carbon and climate resilient City.

The Proposed Scheme is one of 12 schemes to be delivered under the BusConnects Dublin - Core Bus Corridors Infrastructure Works (hereinafter called the CBC Infrastructure Works). The CBC Infrastructure Works is one of the initiatives within the NTA's overall BusConnects Programme.

The BusConnects Programme seeks to greatly improve bus services in Irish cities, including Dublin, so that journeys by bus will be fast, reliable, punctual, convenient, and affordable.

Further information is provided in Chapter 2 (Need for the Proposed Scheme), while Chapter 3 (Consideration of Reasonable Alternatives) outlines the alternatives considered.

It is envisaged that the CBC Infrastructure Works, once completed, will deliver the radial Core Bus Corridors identified in the current Transport Strategy for the Greater Dublin Area 2016-2035 (hereinafter referred to as the GDA Transport Strategy).

A full description of the Proposed Scheme is provided in Chapter 4 (Proposed Scheme Description), which is accompanied by the scheme design drawings in Volume 3 (Figures) of this EIAR, while the assessment of cumulative impacts and interactions with other schemes are presented in Chapter 21 (Cumulative Impacts & Environmental Interactions) of this EIAR.

The EIAR is defined by the Environmental Protection Agency (EPA) “*Guidelines on the Information to be contained in Environmental Impact Assessment Reports*” as ‘a report or statement of the effects, if any, that the proposed project, if carried out, would have on the environment’ (EPA 2022). The EIAR details the consideration of reasonable alternatives, consideration and assessment of likely significant impacts, mitigation and avoidance measures to reduce significant adverse impacts, and an assessment of residual impacts. This EIAR has been completed in accordance with all applicable legislation and all relevant guidance documents and will facilitate An Bord Pleanála (ABP) in undertaking an EIA for the Proposed Scheme under the EIA Directive¹ and Section 50 of the Roads Act 1993, as amended by S.I. No. 279/2019 - European Union (Roads Act 1993) (Environmental Impact Assessment) (Amendment) Regulations 2019 (hereinafter referred to as the “Roads Act”).

1.2 Aim and Objectives

The aim of the Proposed Scheme is to provide enhanced walking, cycling and bus infrastructure on this key access corridor in the Dublin region, which will enable and deliver efficient, safe, and integrated sustainable transport movement along the corridor. The objectives of the Proposed Scheme are to:

- Enhance the capacity and potential of the public transport system by improving bus speeds, reliability, and punctuality through the provision of bus lanes and other measures to provide priority to bus movement over general traffic movements;
- Enhance the potential for cycling by providing safe infrastructure for cycling, segregated from general traffic wherever practicable;
- Support the delivery of an efficient, low carbon and climate resilient public transport service, which supports the achievement of Ireland’s emission reduction targets;
- Enable compact growth, regeneration opportunities and more effective use of land in Dublin, for present and future generations, through the provision of safe and efficient sustainable transport networks;
- Improve accessibility to jobs, education, and other social and economic opportunities through the provision of improved sustainable connectivity and integration with other public transport services; and
- Ensure that the public realm is carefully considered in the design and development of the transport infrastructure and seek to enhance key urban focal points where appropriate and feasible.

The planning and design of the Proposed Scheme has been guided by these aims and objectives, with the need for the Proposed Scheme described in detail in Chapter 2 (Need for the Proposed Scheme) of this EIAR.

The outcomes achieved from delivering the Proposed Scheme will be:

- An attractive, resilient, equitable public transport network better connecting communities and improving access to work, education, and social activity;
- To facilitate a transport infrastructure network that prioritises walking and cycling and a mode shift to public transport; and
- To support increased economic and social potential through integrated land-use and transport planning to reduce the time burden of travel.

¹ 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 (hereafter referred to as the 2011 EIA Directive), as amended by 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 (hereafter referred to as the 2014 EIA Directive, which collectively are referred to as the EIA Directive).

1.3 Delivery of Project

In the event that approval is granted in respect of the Proposed Scheme, it is proposed to deliver the CBC Infrastructure Works over the period from 2023 to 2028. In the event of approval by ABP under Section 51 of the Roads Act and confirmation of the Compulsory Purchase Order (CPO) to allow property acquisition to facilitate the delivery of the Proposed Scheme, it is anticipated that construction will commence within a short period of time following ABP approval of the scheme. The Proposed Scheme has an expected construction programme to completion of approximately 24 months.

1.4 Role of the National Transport Authority

The NTA is a statutory non-commercial body, which operates under the aegis of the Department of Transport. The NTA was established on foot of the Dublin Transport Authority Act 2008, as amended (“the 2008 Act”).

The NTA has some specific additional functions in respect of infrastructure and the integration of transport and land use planning in the GDA, reflecting the particular public transport and traffic management needs of the Eastern region of the country comprising approximately 40% of the State’s population and economic activity.

The NTA is responsible for the development and implementation of strategies to provide high quality, accessible and sustainable transport across Ireland. The NTA has a number of statutory functions including the following which are relevant to the Proposed Scheme:

- Develop an integrated, accessible public transport network;
- Provide bus infrastructure and fleet and cycling facilities and schemes; and
- Invest in all public transport infrastructure.

Specifically, under Section 44(1) of the 2008 Act (as amended), ‘*in relation to public transport infrastructure in the GDA, the Authority shall have the following functions:*

- (a) to secure the provision of, or to provide, public transport infrastructure;*
- (b) to enter into agreements with other persons in order to secure the provision of such public transport infrastructure, whether by means of a concession, joint venture, public private partnership or any other means; and*
- (c) to acquire and facilitate the development of land adjacent to any public transport infrastructure where such acquisition and development contribute to the economic viability of the said infrastructure whether by agreement or by means of a compulsory purchase order made by the Authority in accordance with Part XIV of the Act of 2000’.*

The Board of the NTA, at its meeting on 18 October 2019, considered whether the function of providing the public transport infrastructure comprising of the CBC Infrastructure Works should be performed by the NTA itself under the provisions of Section 44(2)(b) of the 2008 Act. Following consideration, the Board of the NTA decided that the functions in relation to securing the provision of public transport infrastructure falling within Section 44(2)(a) of the 2008 Act (as amended) in relation to the CBC Infrastructure Works, should be performed by the NTA.

The NTA established a dedicated BusConnects Infrastructure team to advance the planning and construction of the CBC Infrastructure Works, including technical and communications resources and external service providers procured in the planning and design of the 12 Proposed Schemes.

In the case of the Lucan to City Centre Core Bus Corridor Scheme, the functions of the BusConnects Infrastructure team included undertaking the design and planning process, seeking (and obtaining) all development consents including related compulsory acquisition approvals from ABP, and constructing the Proposed Scheme (if approved).

1.5 EIAR – Process, Screening, Content and Methodology

1.5.1 Statutory Requirements

As set out in the *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* (August 2018) (hereinafter referred to as the “2018 Guidelines”), the 2014 EIA Directive requires that public and private projects that are likely to have significant effects on the environment shall be made subject to an assessment prior to development consent being given. As set out in the 2018 Guidelines, Environmental Impact Assessment (EIA) is a process to be undertaken in respect of applications for specified classes of development listed in the EIA Directive before a decision in respect of development consent is made. The process involves the preparation of an Environmental Impact Assessment Report (EIAR) by the applicant, consultations with the public, relevant prescribed bodies and any other affected Member States, and an examination and analysis of the EIAR and other relevant information leading to a reasoned conclusion by the competent authority on the likely significant effects of the proposed development on the environment. Again, as observed in the 2018 Guidelines, the provisions of the 2014 EIA Directive are aimed at enhancing the EIA process through ensuring the completeness and quality of the EIAR submitted by the applicant and the examination undertaken by the competent authority and by providing for early and effective public participation before the development consent decision is made.

The EIA Directive requires that public and private projects that are likely to have significant effects on the environment be made subject to an assessment prior to development consent being given. The requirements of the 2014 EIA Directive were transposed into Irish law with the enactment of a number of implementing legislative measures, including S.I. No. 296/2018 - European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (hereinafter referred to as the 2018 EIA Regulations), with effect from 1 September 2018. Further, S.I. No. 279/2019 – European Union (Roads Act 1993) (Environmental Impact Assessment) (Amendment) Regulations 2019 amended the provisions of the Roads Act and the Roads Regulations 1994 (S.I. No. 119/1994).

It is pursuant to the provisions of the amended Roads Act and Roads Regulations 1994 that this EIAR has been prepared in respect of the Proposed Scheme. Article 5 of and Annex IV to the EIA Directive and Section 50(2) of the Roads Act specify the information to be contained in an EIAR in relation to this Proposed Scheme.

Accordingly, this EIAR contains all of the information prescribed by the relevant provisions of Article 5 of and Annex IV to the EIA Directive, and Section 50(2) of the Roads Act.

1.5.2 Relevant Legislation, Policy and Guidelines

This EIAR has been prepared in accordance with, but not limited to, the following legislation and guidance:

- The EIA Directive;
- Roads Act 1993, (as amended);
- Roads Regulations 1994, (as amended);
- Planning and Development Act 2000 (No. 30 of 2000) (as amended);
- Planning and Development Regulations 2001 (S.I. No. 600 of 2001) (as amended)
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereinafter referred to as the EPA Guidelines) (EPA 2022);
- Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission 2017);
- Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (European Commission 1999);
- The Department of Housing, Planning and Local Government (DHPLG) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (DHPLG 2018);
- Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (European Commission 2013);

- National Roads Authority (NRA) Environmental Impact Assessment of National Road Schemes – A Practical Guide (NRA 2008); and
- Advice Note 17: Cumulative Effects Assessment Relevant to Nationally Significant Infrastructure Projects (The Planning Inspectorate 2019).

Where necessary, the impact assessment chapters refer to policy documents that are specifically relevant to their assessment.

Key policy documents that inform the examination of all environmental topic areas include:

- Project Ireland 2040 National Planning Framework (Government of Ireland 2018a);
- Project Ireland 2040 National Development Plan 2018 – 2027 (Government of Ireland 2018b);
- Project Ireland 2040 National Development Plan 2021 – 2030 (Government of Ireland 2021);
- Climate Action Plan 2019 (Government of Ireland 2019);
- Smarter Travel: A Sustainable Transport Future: A New Transport Strategy for Ireland 2009 – 2020 (DTTAS 2009);
- Eastern and Midlands Regional Assembly (EMRA) Regional Spatial and Economic Strategy for the Eastern and Midland Region 2019 – 2031 (EMRA 2019);
- National Investment Framework for Transport in Ireland (NIFTI) (DoT 2021);
- Greater Dublin Area Cycle Network Plan (NTA 2013);
- Transport Strategy for the Greater Dublin Area 2016 – 2035 (NTA 2016);
- Draft Transport Strategy for the Greater Dublin Area 2022 – 2042 (NTA 2021);
- Dublin City Council (DCC) Dublin City Development Plan 2016 – 2022 (DCC 2016)
- South Dublin County Council (SDCC) South Dublin County Council Development Plan 2022 - 2028 (SDCC 2022); and
- SDCC Liffey Valley Town Centre Local Area Plan (extended 2018) (SDCC 2008).

Where necessary, the impact assessment chapters refer to legislation and guidance documents that are specifically relevant to their assessment.

In addition to the applicable EIA legislation and guidance, all relevant provisions of European Union (EU) Directives and national legislation relating to the specialist areas have also been considered as part of the process and are addressed in the relevant assessment chapters.

The Proposed Scheme is supported by an extensive policy framework of International, European, National, Regional and Local policies, planning strategies and plans. Refer to Chapter 2 (Need for the Proposed Scheme) for further information.

1.5.3 EIA Process

EIA is a systematic and iterative process that examines the potential environmental impacts of a proposed development or project and establishes appropriate design and mitigation measures to avoid, reduce or offset impacts. The assessment of potential environmental impacts arising from the Proposed Scheme has been conducted in accordance with best practice as detailed in the chapters and associated appendices prepared in respect of each relevant environmental topic.

The EIA process can generally be summarised as follows:

- **Screening** – determining whether or not an EIA is required for the Proposed Scheme. This included a review of the Proposed Development and understanding the legislative requirement for EIA under the Roads Act;
- **Consideration of the EIAR's Scope** – the EIA team considered the characteristics of the Proposed Scheme and the likely relevant issues which could arise due to its construction and operation;
- **Baseline Data Collection** – Establishment of a robust baseline of the existing environment in the study area of the Proposed Scheme, including a review of existing available information and undertaking any surveys identified as required during the Scoping phase;

- **Impact Assessment** – Assessment of the potential environmental impacts of the Proposed Scheme with and without mitigation measures, and an iterative process of informing design to avoid impacts;
- **Mitigation** – Formulation of mitigation measures to ameliorate the potential impacts of the Proposed Scheme which cannot be avoided through design;
- **Consultation** – With Statutory Authorities, Stakeholders, the public and other bodies;
- **Decision** – The competent authority, in this case ABP, will decide if the Proposed Scheme can be authorised, and if so, may specify conditions that must be adhered to;
- **Announcement** – The public is informed of the decision; and
- **Monitoring** – When required, monitoring of the effectiveness of implemented mitigation measures during construction and operation.

1.5.4 Screening and the Legislative Requirement for EIA

Screening is the first stage of the EIA process, whereby a decision is made on whether or not an EIA is required.

Section 50 of the Roads Act is concerned with the requirement for EIA of road development. Section 50(1)(a) states that '*A road development that is proposed that comprises any of the following shall be subject to an environmental impact assessment:*

- (i) The construction of a motorway;*
- (ii) The construction of a busway;*
- (iii) The construction of a service area;*
- (iv) Any prescribed type of road development consisting of the construction of a proposed public road or the improvement of an existing public road'.*

Under Article 8 of S.I. No. 119/1994 - Road Regulations 1994 (as amended) the prescribed type of road development for the purposes of Section 50(1)(a)(iv) of the Roads Act are:

- '(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'; and*
- '(b) The construction of a new bridge or tunnel which would be 100 metres or more in length.'*

The Proposed Scheme does not fall under the list of projects identified in Annex I of the EIA Directive. Moreover, the Proposed Scheme does not meet or exceed the thresholds under Section 50 of the Roads Act and/or Article 8 of the Roads Regulations 1994, such that it would automatically trigger the requirement for an EIA.

An EIA Screening Report was prepared, the purpose of which, in accordance with Section 50(1)(c) of the Roads Act, was to consider whether the Proposed Scheme would be likely to have significant effects on the environment. It is considered that the Proposed Scheme is likely to have significant effects on the environment and, as such, requires an EIA to be carried out prior to a decision being made to grant development consent. This is reflected in an EIA Screening Determination made by the BusConnects Programme Board of the NTA on 09 August 2021.

1.5.5 Consideration of the EIAR Scope

As referenced above, the scope of the EIAR was developed having regard to the characteristics of the Proposed Scheme and all likely significant environmental effects which could arise due to its construction and operation.

In addition, during the development of the EIAR, prescribed bodies and relevant non-statutory consultees (refer to Section 1.6 of this Chapter) were consulted to apprise them of the proposed approach to the EIAR and they were afforded the opportunity to provide comment on the approach.

Comments received during this pre-application consultation process with prescribed bodies and non-statutory bodies were reviewed and considered in the preparation of this EIAR.

Moreover, as a result of the three phases of extensive public consultation in respect of the Proposed Scheme, submissions and observations received from the public and public concerns were considered and, where appropriate, issues raised in those submissions and observations are included in the EIAR.

1.5.6 Contents of the EIAR

As set out in the European Commission’s *Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (2017)*, “the EIAR is the document prepared by the developer [of a project] that presents the output of the assessment. It contains information regarding:

- the Project;
- the likely significant effect of the Project,
- the Baseline scenario,
- the proposed Alternatives,
- the features and Measures to mitigate adverse significant effects,
- as well as a Non-Technical Summary and,
- any additional information specified in Annex IV of the EIA Directive.”

Article 5 of and Annex IV to the EIA Directive, as well as and Section 50(2) of the Roads Act specify the information to be contained in an EIAR in relation to this Proposed Scheme.

For clarity on the information to be contained in the EIAR, the relevant sections of the legislation are reproduced in Table 1.1.

Table 1.1: Annex IV of the EIA Directive

Annex IV – Information Referred to in Article 5(1) (Information for the EIAR)
<p>1. Description of the project, including in particular:</p> <ul style="list-style-type: none"> (a) A description of the location of the project; (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; (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; and (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
<p>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.</p>
<p>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</p>
<p>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 hydro morphological 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.</p>
<p>5. A description of the likely significant effects of the project on the environment resulting from, inter alia:</p> <ul style="list-style-type: none"> (a) The construction and existence of the project, including, where relevant, demolition works; (b) The use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources; (c) The emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste; (d) The risks to human health, cultural heritage or the environment (for example due to accidents or disasters); (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; (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; (g) The technologies and the substances used. <p>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.</p>

Annex IV – Information Referred to in Article 5(1) (Information for the EIAR)
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 deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.
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.
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 or Council Directive 2009/71/Euratom 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.
9. A non-technical summary of the information provided under points 1 to 8.
10 A reference list detailing the sources used for the descriptions and assessments included in the report’.

Section 50(2) of the Roads Act specifies the information to be contained in an EIAR, and is reproduced in Table 1.2.

Table 1.2: Section 50(2) of the Roads Act

Section 50(2) of the Roads Act
<p><i>‘50(2) The road authority or the Authority, as the case may be, shall ensure that an environmental impact assessment report referred to in subsection (1B) —</i></p> <p style="margin-left: 20px;">a) <i>is prepared by competent experts,</i></p> <p style="margin-left: 20px;">b) <i>subject to subsection (3), contains the following information:</i></p> <p style="margin-left: 40px;"><i>(i) a description of the proposed road development comprising information on the site, design, size and other relevant features of the development;</i></p> <p style="margin-left: 40px;"><i>(ii) a description of the likely significant effects of the proposed road development on the environment;</i></p> <p style="margin-left: 40px;"><i>(iii) a description of any features of the proposed road development and of any measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;</i></p> <p style="margin-left: 40px;"><i>(iv) a description of the reasonable alternatives studied by the road authority or the Authority, as the case may be, which are relevant to the proposed road development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed road development on the environment;</i></p> <p style="margin-left: 40px;"><i>(v) a non-technical summary of the information referred to in subparagraphs (i) to (iv);</i></p> <p style="margin-left: 40px;"><i>(vi) any additional information specified in Annex IV that is relevant to the specific characteristics of the particular proposed road development or type of proposed road development and to the environmental features likely to be affected,</i></p> <p style="margin-left: 20px;"><i>and</i></p> <p style="margin-left: 20px;">c) <i>takes into account the available results of other relevant assessments carried out pursuant to any Act of the Oireachtas or under European Union legislation with a view to avoiding duplication of assessments.”</i></p>

1.5.7 EIAR Structure

The EIAR for the Proposed Scheme is presented in four volumes as follows:

- **Volume 1 – Non-Technical Summary:** This summarises the findings of the EIAR in a clear, accessible format that uses non-technical language and supporting graphics. The Non-Technical Summary describes the Proposed Scheme, summarises the baseline environment, potential impacts and mitigation measures, and relevant topics of the EIAR in a manner that can be easily understood by the general public;
- **Volume 2 – Main Report:** This includes introductory chapters in addition to ‘assessment’ chapters for each environmental topic in accordance with Annex IV of the EIA Directive. The front-end chapters provide the relevant Proposed Scheme context while the assessment chapters provide a description of the relevant environmental aspects and likely significant impacts with cumulative impacts from other schemes in combination with the predicted impacts of the Proposed Scheme, and summary chapters provided thereafter;

- **Volume 3 – Figures:** This provides drawings, maps, and graphics (including photomontages) that support and are referenced within Volume 2; and
- **Volume 4 – Appendices:** This provides the technical reports that support and are cross-referenced within Volume 2. This includes modelling data, background reports and / or other relevant documents.

The EIAR chapter structure is presented in Table 1.3.

Table 1.3: EIAR Structure

EIAR Chapter	Description
Volume 1: Non-Technical Summary	
NTS	Summary of the EIAR in non-technical language.
Volume 2: Main Report	
Chapter 1	Introduction
Chapter 2	Need for the Proposed Scheme
Chapter 3	Consideration of Reasonable Alternatives
Chapter 4	Proposed Scheme Description
Chapter 5	Construction
Chapter 6	Traffic & Transport
Chapter 7	Air Quality
Chapter 8	Climate
Chapter 9	Noise & Vibration
Chapter 10	Population
Chapter 11	Human Health
Chapter 12	Biodiversity
Chapter 13	Water
Chapter 14	Land, Soils, Geology & Hydrogeology
Chapter 15	Archaeological & Cultural Heritage
Chapter 16	Architectural Heritage
Chapter 17	Landscape (Townscape) & Visual
Chapter 18	Waste & Resources
Chapter 19	Material Assets
Chapter 20	Risk of Major Accidents and / or Disasters
Chapter 21	Cumulative Impacts & Environmental Interactions
Chapter 22	Summary of Mitigation & Monitoring Measures
Chapter 23	Summary of Significant Residual Impacts
Volume 3: Figures	
Figures	Graphics and plans supporting the EIAR chapters, illustrating the Proposed Scheme and environmental information.
Volume 4: Appendices	
Appendices	Technical reference information supporting the EIAR chapters, such as technical reports compiling calculation and detailed background data.

While the EIAR has been prepared in compliance with the EIA Directive, it has also been written to make it accessible to a wider, non-specialist audience. Where technical terminology is used, an explanation is provided in the text, and / or in the glossary of terms which is provided at the beginning of Volume 2 of the EIAR.

Generally, the structure of the Chapters in Volume 2 (Main Report) of this EIAR, aligns with both the European Commission EIAR Guidance (2017) and EPA Guidelines (EPA 2022), and includes the following headings:

- **Introduction:** Provides an overview of the aims and objectives of the specific chapter in assessing the Proposed Scheme and outlines the scope of the assessment;
- **Methodology:** Describes the forecasting methods and evidence used to identify and assess the significant impacts on the environment;

- **Baseline Environment:** The baseline refers to the current state of environmental characteristics. It involves the collection and analysis of information on the condition, sensitivity and significance of relevant environmental topics which are likely to be significantly impacted by the Proposed Scheme;
- **Potential Impacts:** Reporting in the EIAR is structured to ensure that criteria and standards of significance, sensitivity and magnitude used as part of the assessment are identified and documented and that the level of certainty of data is recorded. An explanation is provided for the assessment criteria that have been applied within each environmental topic area, including reference to the appropriate published guidance;
- **Mitigation and Monitoring Measures:** This section sets out measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse impacts on the environment and, where appropriate, identifies any proposed mitigation and monitoring arrangements. This section covers both the Construction and Operational Phases; and
- **Residual Impacts:** Any impacts that are predicted to remain after all mitigation measures have been implemented are referred to as 'Residual Impacts'. These are the remaining environmental impacts of the Proposed Scheme that could not be reasonably avoided.

1.5.8 Assessment Scenarios

1.5.8.1 Do Nothing Scenario

The EIAR chapters considers a 'Do Nothing' scenario (with the exception of Air Quality / Noise & Vibration / Climate which assess the Do Minimum and Do Something scenarios described below). The Do Nothing scenario outlines what is likely to happen to the environment should the Proposed Scheme and other GDA strategic projects (including the other 11 Core Bus Corridor Schemes) not be implemented, taking account of the continuation or change of current management regimes as well as the continuation or change of trends currently evident in the environment.

1.5.8.2 Traffic and Transport Assessment Scenarios

The impact assessments that have been carried as part of Chapter 6 (Traffic & Transport) use the following scenarios:

- **'Do Nothing'** – The 'Do Nothing' scenario is the same as set out above and it represents the current baseline traffic and transport conditions of the direct and indirect study areas **without** the Proposed Scheme in place and other GDA Strategy projects, which is outlined in Chapter 6 (Traffic & Transport). This scenario forms the reference case by which to compare the Proposed Scheme ('Do Something') for the qualitative assessments only.
- **'Do Minimum'** – The 'Do Minimum' scenario (Opening Year 2028, Design Year 2043) represents the likely traffic and transport conditions of the direct and indirect study areas including for any transportation schemes which have taken place, been approved or are planned for implementation, **without** the Proposed Scheme in place – refer to Section 1.5.8.3. This scenario forms the reference case by which to compare the Proposed Scheme ('Do Something') for the quantitative assessments. Further detail on the scheme and demand assumptions within this scenario is included in Chapter 6 (Traffic & Transport).
- **'Do Something'** – The 'Do Something' scenario represents the likely traffic and transport conditions of the direct and indirect study areas including for any transportation schemes which have taken place, been approved or are planned for implementation, **with** the Proposed Scheme in place (i.e. the Do Minimum scenario with the addition of the Proposed Scheme).

1.5.8.3 Do Minimum Transport Schemes

The core reference case (Do Minimum) modelling scenarios (Opening year - 2028 and Design year - 2043) are based on the progressive roll-out of the Greater Dublin Area (GDA) Transport Strategy 2016-2035 (GDA Strategy), with a partial implementation by 2028, in line with National Development Plan (NDP) investment priorities and the full implementation by 2043.

The Do Minimum scenarios (in both 2028 and 2043) include all other elements of the BusConnects Programme of projects (apart from the CBC Infrastructure Works elements) i.e. the new BusConnects routes and services (as

part of the revised Dublin Area bus network), new bus fleet, the Next Generation Ticketing and integrated fare structure proposals are included in the Do Minimum scenarios.

In 2028, other notable Do Minimum transport schemes include; the roll out of the DART+ Programme, Luas Green Line capacity enhancement and the Greater Dublin Area Cycle Network Plan implementation (excluding BusConnects CBC elements).

As outlined above, the 2043 Do Minimum scenario assumes the full implementation of the GDA Strategy schemes, so therefore assumes that proposed major transport schemes such as MetroLink, DART+ Tunnel, Luas line extensions to Lucan, Finglas and Bray are all fully operational.

1.5.9 Assessment Criteria

The assessments evaluate the Construction and Operational Phases of the Proposed Scheme, with the likelihood, extent, magnitude, duration, and significance of potential impacts described. The interactions in impacts between different environmental aspects and the potential for cumulative impacts to arise are also considered. For all environmental topics, the significance of any residual impacts remaining are assessed and presented.

The assessment criteria used generally follow the European Commission EIAR Guidance (2017) and EPA EIAR Guidelines (EPA 2022), as reproduced in Table 1.4, unless otherwise stated and described within the relevant EIAR chapter.

Table 1.4: Description of Effects from the EPA Guidelines (EPA 2022)

Assessment Criteria	
Quality of Effects	
It is important to inform the non-specialist reader whether the effect is positive, negative or neutral.	<p>Positive Effects A change which improves the quality of the environment (for example, by increasing species diversity or improving the reproductive capacity of an ecosystem; or by removing nuisances; or improving amenities)</p>
	<p>Neutral Effects No effect or effects that are imperceptible, within normal bound of variation or within the margin of forecasting error</p>
	<p>Negative / Adverse Effects A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing a nuisance)</p>
Significance of Effects	
'Significance' is a concept that can have different meanings for different topics – in the absence of specific definitions for the different topics the following definitions may be useful.	<p>Imperceptible An effect capable of measurement but without noticeable consequences</p>
	<p>Not Significant An effect which causes noticeable changes in the character of the environment but without significant consequences</p>
	<p>Slight Effects An effect which causes noticeable changes in the character of the environment without affecting its sensitivities</p>
	<p>Moderate Effects An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends</p>
	<p>Significant Effects An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment</p>
	<p>Very Significant Effects An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment</p>
	<p>Profound Effects An effect which obliterates sensitive characteristics</p>
Extent and Context of Effects	
	Extent

Assessment Criteria	
Context can affect the perception of significance. It is important to establish if the effect is unique or, perhaps, commonly or increasingly experienced.	Describe the size of the area, the number of sites, and the proportion of a population affected by an effect
	Context Describe whether the extent, durations, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)
Probability of Effects	
Descriptions of effects should establish how likely it is that the predicted effects will occur – so that the Competent Authority can take a view of the balance of risk over advantage when making a decision.	Likely Effects The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented
	Unlikely Effects The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented
Duration and Frequency of Effects	
'Duration' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful.	Momentary Effects Effects lasting from seconds to minutes
	Brief Effects Effects lasting less than a day
	Temporary Effects Effects lasting less than a year
	Short-term Effects Effects lasting one to seven years
	Medium-term Effects Effects lasting seven to fifteen years
	Long-term Effects Effects lasting fifteen to sixty years
	Permanent Effects Effects lasting over sixty years
	Reversible Effects Effects that can be undone, for example through remediation or restoration
	Frequency of Effects Describe how often the effect will occur. (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)

1.5.10 Details of Competent Experts

The BusConnects Infrastructure team has engaged an environmental team led by Jacobs Engineering to undertake the preparation of this EIAR for the Proposed Scheme, in collaboration with the Engineering Design Team led by AECOM. The responsible competent expert(s) and details of their expertise are provided in Table 1.5.

Table 1.5: Details of Competent Experts

Topic	Main Author – Competency Details
Chapter 1 (Introduction)	<p>David King BEng MEng Certified Project Manager, Jacobs David is the Divisional Director for Transport Planning in Ireland for Jacobs. He has over 20 years' professional experience in policy derivation, transport strategy preparation, modelling, traffic impact, multi-modal scheme appraisal, business case development, planning applications, Environmental Impact Statement (EIS) preparation, Compulsory Purchase Order (CPO), and Oral Hearings for all modes of transport including heavy rail, light rail, bus and BRT, and Metro. He holds an honours degree and Master's Degree in Engineering from Technological University Dublin (formerly IT Tallaght) and is a certified Project Manager. David has excellent experience in all aspects of transportation planning, project appraisal and project management of public transport and urban planning schemes, and his areas of expertise include:</p> <ul style="list-style-type: none"> Professional witness at several Oral Hearings for key infrastructure development proposals in Ireland such as Metro North, Luas Cross City, Luas Citywest, and Luas Docklands. Oral Hearing evidence included presenting the Business Case for the Scheme, and environmental evidence in relation to planning and policy, traffic, socioeconomics, and land-use. Wide-ranging experience in the preparation of Railway Orders, including Metro North, Metro West, and Luas Cross City. <p>David has overall responsibility for coordinating all services relating to the identification and mitigation of environmental impacts associated with the 12 Schemes (including the Proposed Scheme) that comprise the CBC Infrastructure Works.</p> <p>Eddie Feely BSc MIES CEnv, Arup Eddie is an Associate with Arup and has over 21 years' experience as an Environmental Consultant. He holds a BSc in Environmental Pollution Science from the University of Glamorgan, UK and is a Member of the Institution of Environmental Sciences and is a Chartered Environmentalist. Eddie has managed the preparation of Environmental Impact Assessment Reports Statements for a number of infrastructure projects including High Speed Two Phase 2a (West Midlands to Crewe) in the UK, Curragh Racecourse Redevelopment, DART Underground, Dublin Airport Visual Control Tower and Wicklow Port Access and Town Relief Road. Eddie presented expert witness evidence at the DART Underground and Wicklow Port Access and Town Relief Road oral hearings. Eddie is the overall EIAR coordinator for the 12 Schemes (including the Proposed Scheme) that comprise the CBC Infrastructure Works.</p> <p>Dan Garvey BA (Hons) MSc CEnv MEnvSc CGeog FRGS, Arup Dan Garvey is an Associate with Arup and has over 20 years' experience as an environmental consultant. He holds an MSc in Environmental Protection and is a Chartered member of the Institution of Environmental Sciences. He has managed or supervised the preparation of more than thirty environmental impact statements / assessment reports, and has presented expert witness evidence at Oral Hearings for infrastructural developments such as the Shannon Pipeline, the Mungret to Inchmore Gas Pipeline, the Great Island Gas Pipeline and the Belview Gas Pipeline. Dan was the lead co-ordinator for the Proposed Scheme EIAR.</p> <p>Colin Acton BEng (Hons) CEng MIEI MCIHT Colin Acton is a Regional Director with AECOM Ireland. He holds an honours degree in Civil Engineering Civil from the University of Nottingham. Colin is the Project Manager for the Engineering Design of the Lucan to City Centre Scheme. Colin is a Chartered Member of Engineers Ireland, having achieved Chartered status in 1994, and is a Member of the Chartered Institute of Highways and Transportation. Colin has worked on the planning and design of major infrastructure projects in Ireland and the UK over his thirty-five years' career. Colin Acton has a strong technical background and experience in the delivery of large-scale transportation projects, from concept through planning, design, and construction completion. Proven track record in managing complex multi-disciplinary project teams and integrating stakeholders into the project. Colin has design and management experience of roads, traffic, and bus priority projects from concept design stages through to operation and maintenance. He has worked on various types of construction contracts including traditional and D&B contracts, including NEC type contracts. He has experience in road planning and design, traffic modelling, traffic impact assessments and economic evaluations. Colin Acton was the Project Manager and lead engineer responsible for the design of the Proposed Scheme.</p>
Chapter 2 (Need for the Proposed Scheme)	<p>Dan Garvey David King Colin Acton</p>

Topic	Main Author – Competency Details
	See above
Chapter 3 (Consideration of Reasonable Alternatives)	<p>Dan Garvey Colin Acton See above</p>
Chapter 4 (Proposed Scheme Description)	<p>Dan Garvey Colin Acton See above</p>
Chapter 5 (Construction)	<p>Dan Garvey Colin Acton See above</p> <p>Michael Mitchell BEng (Hons), CEng, MICE, MStructE, MAPM, Arup Michael Mitchell is an Associate Director with ARUP. He holds an honours degree in Civil Engineering from University of Strathclyde. Michael has 25 years’ relevant experience and in particular, managed the planning and design for various road schemes including A2 Buncrana Road, A6 Randalstown to Castledawson, Busway Bridge & Ramps at Belfast Transport Hub and Dunleer-Dundalk Motorway.</p>
Chapter 6 (Traffic & Transport)	<p>Ian Byrne BEng MSc, Systra Ian Byrne is a Business Director of the Data, Modelling and Analytics Sector within SYSTRA and has over 23 years’ experience as a Transport Planning Consultant. He holds an honours degree in Civil Engineering and a Master’s Degree in Transportation Engineering from Trinity College Dublin. Ian is a Fellow in the Chartered Institute of Highways and Transportation. Ian has prepared transport assessments for many strategies and multi-modal schemes across Ireland and has been a professional witness at a number of Oral Hearings for key infrastructure development proposals in Ireland including Port of Cork Ringaskiddy Development, Metro North, Adamstown SDZ, N4 Upgrade Scheme and Cork Docklands Infrastructure amongst others.</p> <p>Paul Hussey BEng, Systra Paul Hussey is an Associate with Systra and has over 13 years’ experience as a Transport Planning Consultant. He holds an honours degree in Civil Engineering from University College Dublin. Paul has 13 years’ relevant experience in a wide range of transportation planning, policy and engineering projects. Through his work Paul has gained a broad knowledge of transport scheme appraisal in Ireland and has successfully delivered a number of challenging transport assessment and appraisal projects such as the MetroLink Cost Benefit Analysis (CBA), the Greater Dublin Area (GDA) Transport Strategy, Cork Metropolitan Area Transport Strategy (CMATS), DART Expansion Options Assessment and the Metro North Route Alignment Options Appraisal.</p> <p>Stuart Gibb BEng(Mech)(Hons), Jacobs Stuart is a Senior Associate Director and technical expert with over 15-years’ professional experience who leads Jacobs simulation modelling capability in the UK and Europe. In recent years Stuart has led on the development of a number of major, multi-modal microsimulations models including those for the Dublin BusConnects and Metrolink major projects as well as those for other key clients including Transport for London, Highways England, the Department for Transport and a host of UK local authorities. Stuart holds an honours degree in Mechanical Design Engineering.</p>

Topic	Main Author – Competency Details
Chapter 7 (Air Quality)	<p>Edward Porter, BSc(Hons) PhD C Chem MRSC MIAQM MIEEnvSc, AWN Consulting</p>
Chapter 8 (Climate)	<p>Edward Porter is a Director (Air Quality) with AWN Consulting. He holds an honours degree in Chemistry from University of Sussex and is a Chartered Chemist and a Full Member of the Institute of Environmental Sciences (IES).</p> <p>Edward has 25 years' relevant experience and in particular, has prepared numerous Air Quality and Climate Impact Assessments for infrastructural developments including the M3 Navan Bypass and Kells Bypass, M7/M8 Motorway and the M1 Dundalk Western Bypass. Edward presented expert witness evidence at the An Bord Pleanála oral hearings into these developments.</p> <p>Jovanna Arndt, BSc (Hons) PhD AMIAQM AMIEnvSc, AWN Consulting</p> <p>Jovanna Arndt is a Senior Environmental Consultant with AWN Consulting. She holds a BSc (Hons) in Environmental Science (2010) and a Ph.D. in Atmospheric Chemistry from University College Cork (2016) and is a member of the Institute of Air Quality Management. Jovanna has specialised in air quality for 10 years, 5 of which have been spent preparing Air Quality Impact Assessments for UK-based infrastructural developments such as HS2 and numerous Highways England road schemes, as well as assessing impacts from traffic management schemes such as the Liverpool and Newcastle/Gateshead Clean Air Zones.</p> <p>Dr. Avril Challoner, BEng, MIAQM, MIEEnvSc CSci, AWN Consulting</p> <p>Dr. Avril Challoner is a Senior Environmental Consultant with AWN Consulting. She holds a BSc (Hons) in honours degree in Environmental Engineering from National University of Ireland Galway (2009) and a Ph.D. in Air Quality from Trinity College Dublin (2013) . She is a member of the Institute of Air Quality Management and a Chartered Scientist (CSci). Avril has specialised in air quality for 11 years, 8 of which have been spent in consultancy working on Air Quality and Climate Impact Assessments for infrastructural developments. Avril presented expert witness evidence at the An Bord Pleanála oral hearings at developments including the N5 Ballaghaderreen to Scramoge upgrade.</p> <p>Ian Byrne/Paul Hussey – see above</p> <p>Ian and Paul have provided transport planning inputs for the preparation of the Climate assessment.</p>
Chapter 9 (Noise & Vibration)	<p>Jennifer Harmon BSc, MIOA, AWN Consulting</p> <p>Jennifer Harmon is the Principal Acoustic Consultant with AWN Consulting. 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). She has worked as a consultant since 2000, specialising in acoustics since 2001, and possesses 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 as well as light and heavy rail projects as 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>
Chapter 10 (Population)	<p>Karan Monga BA Hons Economics MSc BIT, Jacobs</p> <p>Karan is an economist and a Senior Associate Director at Jacobs with more than 20 years' experience in providing economic advisory services to a range public and private sector clients globally. His experience includes social and economic impact assessments for various infrastructure and development projects, including different forms of transport assets. His recent experience includes economic appraisal of SPRINT (new express bus service) in West Midlands, active mode impact assessment of Ten-T proposals in Donegal, financial appraisal of new ferry routes in Qatar, economic evaluation of Millennium Challenge Corporation's grant in highway infrastructure Senegal. He is currently working on economic evaluation of UK Department for Transport's ZEBRA (Zero Emission Bus Regional Area) programme.</p> <p>Siobhan Fisher BSc ICTTech, Jacobs</p> <p>Siobhan Fisher is a Transport Planning Consultant with Jacobs and has 4 years' experience of working on a wide variety of projects. She holds an honours degree in Mathematics and holds accreditation of ICTTech with the Institute of Highway Engineers. Siobhan has worked on a wide range of projects, including authoring of the NTA Greater Dublin Area Naas Road Study, Transport Assessment originator for the Southampton to London Pipeline, and originator of local council and National Highways business cases and Transport Assessments and junction models.</p>

Topic	Main Author – Competency Details
Chapter 11 (Human Health)	<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>Jenny Wade MSc C.Env MIEMA, Jacobs Jenny Wade is an Associated Director with Jacobs. She holds a Master's degree in Environmental Management from Imperial College, London and is currently completing a Masters in Public Health part-time through Cardiff University. Jenny has over 18 years' relevant experience in environmental impact assessment and strategic environmental assessment.</p>
Chapter 12 (Biodiversity)	<p>Aebh�n Cawley CEnv MCIEEM, Scott Cawley Ltd. Aebh�n Cawley is Managing Director with Scott Cawley. She holds an honours degree in Zoology from Trinity College, Dublin and a postgraduate diploma in Physical Planning at Trinity. She is a Chartered Environmentalist (CEnv) with the Society for the Environment (Soc Env) and a Full Member of the CIEEM. Aebh�n Cawley is an experienced ecological consultant with extensive experience in public and private sector projects including complex development types including infrastructure, renewable energy and ports. Aebh�n has delivered lectures and training on Appropriate Assessment to a range of organisations and professional institutes and regularly provides Appropriate Assessment training to local authorities and other public sector organisations. She authored guidelines on Appropriate Assessment for the EPA and delivered training on its application to its inspectorate. Aebh�n 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.</p> <p>Kristie Watkin Bourne MSc, Scott Cawley Ltd. Kristie Watkin-Bourne is a Senior Consultant Ecologist at Scott Cawley Ltd. She holds a first-class honours degree in Physical Geography from Swansea University, and a first-class Master's degree in Applied Environmental Science from University College Dublin. She is a CIEEM Member (Qualifying) and is experienced in conducting a range of terrestrial and aquatic ecological surveys for habitat and site appraisals, species monitoring, and impact assessment. With five years consultancy experience, Kristie has a wide range of experience in Appropriate Assessment, Ecological Impact Assessment, Cumulative Impact Assessment, and Strategic Environmental Assessment of plans and projects within the Irish planning environment. Kristie has worked on behalf of public sector bodies including Irish Water, The National Transport Authority, and several County Councils in addition to private developers across infrastructure, renewable energy, and residential development projects. Kristie also undertook specific elements of the field survey work.</p>
Chapter 13 (Water)	<p>Heidi Curran BSc, DIPWEM, CEnv, MIEMA, Jacobs Heidi Curran is a Principal Consultant with Jacobs. She holds an honours degree in Environmental Biology from the University of Liverpool and is a Chartered Environmentalist and Full member of the Institute of Environmental Management and Assessment (IEMA). Heidi has 29 years' relevant experience and in particular, specialised in freshwater biology during her degree, working as a regulatory enforcement officer for the Environment Agency and for the past 6 years, an EIA coordinator and lead author for water chapters within EIAs for major infrastructure projects in the energy, rail and water sectors. She is currently lead author for the water chapter on Irish water's Water Supply Project, which is a 171km pipeline and has over 400 crossings of waterbodies on its route</p>
Chapter 14 (Land, Soils, Geology & Hydrogeology)	<p>Marie Fleming BSc (Hons), MSc. Arup Marie is an Associate working in the Ground Engineering team in Arup and has a Bachelor of Science (Earth Sciences) honours degree from University College Cork and a Masters Degree in Engineering Geology from Imperial College London. Marie has over 18 years professional experience on large infrastructure projects and is a Professional Geologist (PGeo) with the Institute of Geologists of Ireland (IGI), a Chartered European Geologist (EurGeol) with the European Federation of Geologists and a Fellow of the Geological Society</p>

Topic	Main Author – Competency Details
	<p>of London (GSL). She has prepared numerous Land, Soils, Geology & Hydrogeology Impact Assessments for infrastructural developments including DART Underground and the M7 Osberstown Interchange and R407 Sallins Bypass.</p>
<p>Chapter 15 (Archaeological & Cultural Heritage)</p>	<p>Lisa Courtney BA (Hons) MSc (Ag) Dipl. Bus. Mgt., Adv. Dipl. In Planning & Env. Law, MIAI. Courtney Deery Heritage Consultancy Ltd Lisa is a director of Courtney Deery Heritage Consultancy and has over 26 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 has lectured in EIA and archaeology at UCD and 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 including N5 Ballaghaderreen to Scramoge EIAR and Kildare Rail Route and conservation initiatives, her experience demonstrates a capability of characterising and the existing historic and archaeological environment and evaluating its significance. Lisa presented expert witness evidence at the An Bord Pleanála oral hearings into the above mentioned developments.</p> <p>Dr Clare Crowley BA (Hons), PhD. Courtney Deery Heritage Consultancy Ltd Clare, a Senior Heritage Consultant, has more than 20 years' experience in the field and holds a PhD in Archaeology (Dublin Institute of Technology, 2009), a BA (Hons) in Ancient History, Archaeology & French (Trinity College Dublin, 1996), a Certificate in Repair and Conservation of Historic Buildings (Dublin Civic Trust, 2004) and a Certificate in Condition Surveys of Historic Buildings (University of Oxford, 2017). Clare has carried out numerous surveys and evaluations of archaeological monuments, buildings, sites and historic landscapes and streetscapes for the purposes of conservation and environmental impact assessment and has presented expert witness evidence for the M28 Cork to Ringaskiddy EIAR.</p>
<p>Chapter 16 (Architectural Heritage)</p>	<p>Cathal Crimmins B.Arch, MArch Sc (Conservation of Towns and Buildings), RIAI Grade 1 Accredited Conservation Architect, FRIAI, MRIBA, Cathal Crimmins is a conservation architect with over thirty years' experience researching, recording and assessing historic structures, and landscapes. He is a fellow of the RIAI and member of RIBA. He is an RIAI Grade 1 accredited Conservation Architect. Cathal has tutored in architecture and in architectural conservation. Relevant experience includes the preparation of inventories of Tullamore, Carlow, Chapelizod, Henrietta Street, O'Connell Street and Dundrum for the OPW, the Irish Architectural Archive, The Dublin Civic Trust, UCD and private clients, advising on additions and deletions to the Record of Protected Structures to Dublin City Council & Galway City Council.</p> <p>Julia Crimmins, BA (Hons), MUBC, MSc (Sp) Julia Crimmins is a built heritage consultant with Cathal Crimmins Architect, RIAI Grade 1 Accredited Practice. Julia holds a BA in Archaeology University College Dublin, a MUBC Master's in Urban and Building conservation University College Dublin (2006) and a MSc (Sp) in Spatial Planning from the Technical University of Dublin. Julia is a member of the Institute of Archaeologists of Ireland (IAI), The Irish Planning Institute (IPI) and a member of the International Council of Monuments and Places (ICOMOS). Julia has over 15 years of experience working on buildings and sites of architectural heritage interest, preparing Conservation Reports, Architectural Heritage Impact Assessments and Architectural Heritage Chapters of EIARs.</p>
<p>Chapter 17 (Landscape (Townscape) & Visual)</p>	<p>Thomas Burns B Agr. Sc. Dip. EIA Mgmt MILI EFLA., Brady Shipman Martin Thomas Burns is a Partner and landscape planner with Brady Shipman Martin. He holds an honours degree in Agricultural Science and a post-graduate Diploma in Environmental Impact Assessment Management (1994) from University College Dublin. 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 DART Underground project. Given his experience on National Roads, Thomas was commissioned by the TII to draft 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</p>

Topic	Main Author – Competency Details
	<p>2013-2019; the Department of Environment IOSEA 5 and as well being part of the wider team that carried out the Environmental Assessment of Food Harvest 2020. 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>Alex Craven BSc (Hons) MLA - Brady Shipman Martin Alex Craven is an LVIA Specialist and landscape architect with Brady Shipman Martin. He holds an honours degree in Landscape Architecture with Ecology and a Master's degree in Landscape Architecture from the University of Sheffield.</p> <p>Alex has 8 years' relevant experience and has been involved with landscape and visual assessment throughout that time for a range of project types including infrastructural projects. He has worked on a wide range of landscape and visual impact assessments for renewable energy, residential, infrastructure and leisure development projects. He has been involved in all stages of the process from report writing to generating Zones of Theoretical Visibility, on site viewpoint and receptor assessments, verified viewpoint photography and production of a range of report-based figures. He has been involved with managing the detailed design of a section of the N25 in Co. Waterford, and also landscape and visual assessment for the Knock to Collooney N17 (Atlantic Economic Corridor) Upgrade. Alex Craven assisted in the preparation of Chapter 17 (Landscape (Townscape) & Visual) of the EIAR.</p>
Chapter 18 (Waste & Resources)	<p>Janet Lynch BEng, MCTWM, MIEI CEng, Arup 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, 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>Hannah Lesbirel MEnvSci, GradIEMA, Arup Hannah Lesbirel is a Consultant with ARUP. She holds an honours Master's degree in Environment Science from University of Southampton.</p> <p>Hannah has 4 years' relevant experience and in particular, develops technical and operational solutions for waste management for strategic reporting. Hannah develops strategic solutions for waste management across a variety of types of projects, from small to large and city scale developments. Hannah has experience as waste and resource specialist for several environmental planning and permitting works, contributing to the generation of baseline reports and environmental statement chapters for waste and resource management, reviewing planning applications and discharge of conditions including London Legacy Development Corporation, confidential mixed used skyscraper, London and Thames Water Upgrade Works.</p>
Chapter 19 (Material Assets)	<p>Hannah Cullen BA MSc C.WEM CEnv MCIWEM, Jacobs Hannah Cullen is a Principal Environmental Scientist with Jacobs Engineering Ireland and has eight years of professional experience in the environmental sector. She holds a BA in Geology from Trinity College Dublin and an MSc in Environmental Science from University College Dublin. She is a Chartered Environmentalist (CEnv) with the Society of the Environment and is a Chartered Water and Environmental Manager (C.WEM) with the Chartered Institute of Water and Environmental Management (CIWEM). Hannah has experience in Environmental Impact Assessment, environmental monitoring, environmental auditing, and environmental site constraints assessment and due diligence work. She has worked on a range of both public and private sector Environmental Impact Assessment Reports of varying scales over the past six years since joining Jacobs.</p>
Chapter 20 (Risk of Major Accidents and / or Disasters)	<p>Dan Garvey See above</p>

Topic	Main Author – Competency Details
Chapter 21 (Cumulative Impacts & Environmental Interactions)	<p>Peter Gambrill C.Env MIEMA, Jacobs Peter is a Technical Director in Jacobs and is a Chartered Environmentalist (CEnv) and Full Member of the Institute of Environmental Management and Assessment (IEMA), with over 20 years’ experience as an environmental consultant, technical lead and project manager on a wide variety of projects and for different sectors. He has experience and knowledge working on projects of differing sizes and complexity, managing and coordinating multidiscipline teams on projects for a variety of clients. Peter has had a varied background, starting his career as a geotechnical and geoenvironmental engineer and moving on to more holistic environmental management and impact assessment, delivery and project management. He has developed a breadth of experience and knowledge including; EIA (including DCO in the UK), SEA, permitted development and planning requirements; compliance auditing and environmental management systems; waste management; environmental permitting and regulation; protected species mitigation; contaminated land assessment and remediation; stakeholder and contractor liaison and construction supervision.</p> <p>Isabelle Barnard BSc PIEMA, Jacobs Isabelle is an Environmental Consultant at Jacobs, currently working towards Practitioner Membership of the Institute of Environmental Management and Assessment (IEMA). Isabelle graduated from the University of Southampton in 2019 with a First-Class Honours in Environmental Science and prior to joining Jacobs, gained experience working for a small engineering consultancy. Isabelle has just under three years’ experience at Jacobs and has developed a clear understanding of the EIA process through work on various projects for different clients (i.e. highways, rail, utilities, nuclear). Isabelle’s experience includes the coordination of and contribution to three EIAs to support planning application submissions and planning application addendum submissions. Contributions include authoring chapters of Scoping Reports and Environmental Statements, and preparation of Non-Technical Summaries and Environmental Management Plans. Isabelle has also assessed numerous smaller-scale schemes across different sectors, most notably highways and utilities.</p> <p>Dan Garvey See above</p> <p><i>Note: the cumulative impact and environmental interactions assessment for each environmental topic has been developed by the relevant competent responsible experts listed above</i></p>
Chapter 22 (Summary of Mitigation & Monitoring Measures)	<p>Dan Garvey See above</p>
Chapter 23 (Summary of Significant Residual Impacts)	<p>Dan Garvey See above</p>

1.6 Consultation

1.6.1 Consultation Objectives

Public participation has been an integral part of the iterative development of the Proposed Scheme from the outset. Pre-application public consultation was carried out, in three phases (one in relation to Emerging Preferred Route (EPR) consultation and two in relation to the Preferred Route Option (PRO) consultation), to inform the public and stakeholders of the development of the Proposed Scheme from an early stage and to seek feedback and participation throughout its development. The BusConnects Infrastructure team has undertaken a comprehensive consultation and engagement process with stakeholders, landowners and members of the public throughout the development of the Proposed Scheme.

The primary objective of the non-statutory public consultation process was and is to provide opportunities for members of the public and interested stakeholders to contribute to the planning and design of the Proposed Scheme and to inform the development process. Public participation in the planning and design of the Proposed Scheme was encouraged from an early stage through on-the-ground engagement and information and media campaigns.

The early involvement of the public and stakeholders ensured the views of various groups, individuals and stakeholders were taken into consideration throughout the development of the Proposed Scheme and in the preparation of this EIAR.

The non-statutory consultation process assisted in:

- The establishment of a sufficiently robust environmental baseline for the Proposed Scheme and its surroundings;
- The identification, early in the process, of specific concerns and issues relating to the Proposed Scheme so that they could be appropriately accounted for in the design and assessment scope; and
- Ensuring the appropriate involvement of the public and stakeholders in the assessment and design process.

The consultation process involved engagement from:

- Emerging Preferred Route (EPR) Option Consultation; through
- Preferred Route Option (PRO) Consultations.

More specific information relating to the pre-application phases of public consultation, issues which emerged and the manner in which they informed the iterative development of the Proposed Scheme are outlined in the sections which follow.

1.6.2 Emerging Preferred Route Option Consultation

1.6.2.1 EPR Consultation Overview

The first non-statutory public consultation on the BusConnects CBCs took place on a phased basis. The first phase of consultation occurred from 14 November 2018 to 29 March 2019. The second phase ran from 23 January 2019 to the 30 April 2019 and the final phase ran from 26 February 2019 until 31 May 2019. The Lucan to City Centre CBC EPR Option formed part of the first phase of the consultation, which closed on 29 March 2019.

The public were invited to make written submissions relating to the content of the Lucan to City Centre Core Bus Corridor Emerging Preferred Route. Submissions could be made by post; by email; or by hand-delivery directly in the reception of the Authority's offices. There were two public information events held in which the public were able to view the proposals and discuss them directly with members of the BusConnects Infrastructure team. They were held at the West County Hotel, Chapelizod on 16 January 2019 and at the Gresham Hotel, O'Connell Street on 17 January 2019.

In addition to the open public consultation, a Community Forum was established with the aim of facilitating two-way communication between local communities and the BusConnects Infrastructure team.

A Community Forum meeting took place in West County Hotel, Chapelizod on 09 January 2019 for community representatives and elected representatives. The meeting involved the presentation of an overview of the EPR for the Lucan to City Centre Core Bus Corridor and, with the use of an independent chairperson, the representatives were given the opportunity to ask questions of the BusConnects Infrastructure team and provide feedback.

In addition, there have been meetings held with residents' groups to provide updates on aspects of the Proposed Scheme. The BusConnects Infrastructure team has made the presentations given at the Community Forum and Residents Group meetings available to the public on the BusConnects website (www.busconnects.ie).

Letters were delivered to each individual potentially impacted property affected by the Proposed Scheme that, in addition to providing information about the Proposed Scheme, offered a one-to-one meeting to discuss the likely impact, issues and concerns. Each potentially impacted property was also sent a copy of the Emerging Preferred Route brochure for the Lucan to City Centre Core Bus Corridor. In total, 16 letters were delivered on 02 November 2018 along the Lucan to City Centre Core Bus Corridor, with three property owners availing of the one-to-one meetings in late 2018/ early 2019.

There were a total of 44 submissions made in respect of the Proposed Scheme during the Emerging Preferred Route public consultation phase.

1.6.2.2 Lucan to City Centre – Key Issues Emerging from the EPR Consultation Process

The key issues emerging from the EPR consultation process were as follows:

- Starting Point of the Proposed Scheme – Some submissions felt it would be a missed opportunity if the Proposed Scheme did not begin further west on the N4, particularly at Junction 5 (Leixlip – Celbridge) or at Junction 6 (Celbridge West – Leixlip West). Interest was expressed for a secure 'Park and Ride' facility at this location, which would allow for commuters living further out to shorten their journey time by switching to public transport on the N4, although it was felt that there is no secure place for passengers to leave their cars while using the bus;
- N4 Junction 3 safety and design issues – There was significant opposition to several aspects of the proposals at this junction. A large proportion of these objections came from residents of Woodville Estate. Changes to the boundary wall of this estate were thought to be unnecessary if the cycle lane terminates just after the corner. Residents stated that the boundary wall had been altered before and not replaced in the same condition;
- Cycling – There was also concern for the safety for cyclists. It was suggested that the adequacy of the cycle facilities had not been fully considered, with the proposed cycle lane on the N4 westbound off ramp, having cyclists located between traffic lanes of particular concern. It was felt that segregated infrastructure for both pedestrians and cyclists should be considered here;
- Cycling – Physical issues that negatively impact cyclists - There was a significant number of comments relating to the stop-start nature of a cyclist's journey along this route. It was felt that the lack of continuity for cyclists at minor junctions / accesses to private properties would lead to confusion as to who has right of way. It was also felt that through cyclists should obtain right of way in the same manner as a through vehicle. It was noted that there are existing kissing gates on both sides of the pedestrian overpass near Lucan Shopping Centre, with this bridge being the only way that cyclists can cross if they wish to travel to/ from Mount Andrew and St. Edmunds Estate.
- Cycling – It was suggested that two-way segregated cycle facilities on both sides of the road would mitigate this issue;
- Cycling – The lack of cycle facilities on the Chapelizod Bypass was also raised as an issue. It was felt that cyclists prefer to cycle in the bus lane here as opposed to cycling through Chapelizod and Palmerstown due to the stop-start nature of the route and the current poor facilities;
- Traffic congestion – Concerns were raised that reducing the number of lanes for traffic on the M50 overbridge in order to provide a bus lane would lead to congestion;

- **Traffic Congestion** – Many submissions queried the need for the proposed at-grade pedestrian crossing at the Kennelsfort Road Junction, in view of the existing pedestrian overbridge. Residents were concerned that this would lead to increased congestion for east-west traffic. It was also felt that the reduction of traffic to one lane outbound at Heuston Station would also impact traffic and congestion in the area at peak times. A traffic impact assessment was also requested;
- **Environmental Queries-** Several submissions raised queries in relation to the environmental impact of implementing the bus corridor. Many people were concerned about the increase in noise and air pollution the buses would cause around their residences, with a request for appropriate screening along the northern side of Chapelizod Bypass;
- **Removal of Trees** – The removal of trees was raised in the context of the loss of a noise barrier from traffic and environmental impacts. It was requested that any trees that are removed are replanted in a prompt manner. There were concerns raised about what was interpreted as a proposed pedestrian overpass at the Chapelizod Bypass west of the M50 interchange and the potential visual impact it may have;
- **Heuston Station Design Issues** – Various issues were raised around Heuston Station, particularly in relation to the pedestrian crossing adjacent to the south entrance on St. John's Road West. It was noted that the pedestrian crossing was proposed to be moved westward, away from the entrance and main ticket office of Heuston Station. It was suggested that the crossing should be raised and widened to at least 4m and the railings be removed as it is an essential link for bus and rail interchangeability. It was felt that the railings have proved to be dangerous to road users and a cause of pedestrian congestion. In addition, it was requested that the area be made a 30 km/h zone. It was felt that the bus stop area by the station needs to be increased in length to accommodate longer stay buses and it should include a bypass for cyclists. Concern was expressed about the safety of the proposed inbound cycle lane merging with the inbound bus lane with a traffic lane also crossing it. Finally it was also suggested that the taxi ranks shown to be located inside the cycle track could be a potential hazard for both taxis and cyclists;
- **Bus Stop Locations -** Concerns were raised about the location of several bus stops along this route, including the relocation of the bus stop from the R835 (outside Woodville) to the R136 (opposite Woodies). The view was expressed that the current location of the bus stop allows residents to exit/enter Woodville Estate in gaps created by a stopping bus;
- **Bus Stop Locations -** A comment was made that the bus stops on St. John's Road West were in an irrelevant location with no nearby demand. There was also a request that a bus stop be located at the existing pedestrian bridge over the eastern end of the Chapelizod bypass linking Sarsfield Road with Liffey Valley Park;
- **Bus Stop Safety** – It was suggested that the bus stops proposed on the overbridge on the Chapelizod Bypass would be located in a secluded location and there were concerns about the safety of users. There were also requests for adequate lighting around bus stops, in particular in isolated locations. It was also suggested that where stops are located in bus lanes, such as on the Chapelizod bypass, this may cause potential safety issues as other buses and taxis may overtake stopped buses, where no bus layby is provided. It was requested that bus laybys be used where possible;
- **Chapelizod bypass – rerouting of services -** A large number of submissions mentioned the lack of cycle facilities along the Chapelizod bypass, as it is the most direct for cyclists and is currently used by many due to the stop-start nature and poor condition of alternative routes to the City Centre;
- There was also a concern raised about the rerouting of existing bus services from Chapelizod village onto the bypass as part of Bus Connects;
- **Physical Issues that Negatively Impact Pedestrians -** As outlined in other issues above, concerns have been raised about the impacts for pedestrians around Heuston Station. In addition, concerns were raised about the pedestrian overbridges, both proposed and existing, on the Chapelizod Bypass. The proposed pedestrian crossing at the Kennelsfort Junction generated a number of negative responses regarding impacts on vehicular traffic; while recognizing that the proposals might reduce the time for pedestrians to cross this junction, it was also suggested that the time waiting for the pedestrian lights to change would be similar to the time taken to cross using the existing pedestrian overbridge. It was noted that the proposals show shared surfaces for cyclists and pedestrians throughout the CBC Scheme. The view was expressed that shared surfaces offer a low level of service for all users and put vulnerable pedestrians and disabled pedestrians at risk

- when mixed with high speed cyclists. It was felt that this would be an issue particularly along the N4;
- Loss (Property value, revenue, loss of function / parking, future planning gain) – Some submissions suggested that the proposed bus corridor may have negative impacts on the property value of houses on the route. It was felt that this would particularly affect any properties where land acquisition is necessary. Concerns were also expressed about loss of business revenue due to the rerouting of buses, with the view that the new bus corridor will now bypass areas such as Palmerstown and Chapelizod, potentially reducing footfall;
 - Left Turn Slip Lanes – It was noted that there are several instances of left turn slip lanes, inside on-road cycle lanes, throughout the Core Bus Corridor, such as St. John's Road West onto Military Road, Ballyowen Road onto Lucan Road, N4 onto Ballyowen Road, Kennelsfort Road Upper onto R148, and several occurrences at the South Circular Road Junction. Submissions suggested that these left turning slip lanes are not compliant with the Design Manual for Urban Roads (DMURS) or the NTA's National Cycle Manual (NCM) as they put cyclists at higher risk of accident;
 - Old Lucan Road to Palmerstown traffic issues – There were requests for traffic calming measures for Old Lucan Road (both sides of the M50), and the likely increased number of cyclists using this route. The submissions highlighted that on street parking (by bus users) is an issue currently and residents fear it will get worse due to the improved service provided by buses. Some submissions felt that the existing carriageway of the Old Lucan Road was too wide in some sections, which encourages traffic to travel at speeds higher than the posted speed limit of 30 km/h. It was suggested that there is sufficient space to provide segregated cycle facilities here on both sides of the road, which would reduce the carriageway width and thus reduce the speed of vehicles, and also mitigate the issue of on-street parking;
 - New ideas and Suggestions –. Some of these were to increase the frequency of buses to avoid overcapacity issues on the corridor, to introduce a loop system of connecting the suburbs and keeping the 25d as a regular route. There were also cyclist related suggestions such as a 2-way cycle track on both sides of the N4 and using island bus stops instead of having stops in line with the cyclists;
 - There was a suggestion for a vehicle underpass at Palmerstown with connection to The Oval to facilitate traffic movements at this location. In addition, a free-flow grade separated junction at the Palmerstown / Kennelsfort Road along the lines of that provided further out on the N4 (Newcastle Road) to reduce congestion of east-west traffic was suggested; and
 - Bike Storage – It was also suggested that bike storage be provided at bus stops and Park and Ride facilities.

The issues raised during the first phase of public consultation were considered as part of the route options assessment process and in determining the preferred route. The EPR proposals were amended to address the issues raised in submissions where practicable, including incorporating suggestions and recommendations from local residents, community groups and stakeholders where appropriate. These amendments were incorporated into the designs and informed the PRO design development which was subsequently also published for non-statutory public consultation.

Following the first non-statutory public consultation, a review was undertaken of the scheme proposals along the route based on the following new information which was available for consideration:

- Detailed topographical survey along the route corridor;
- Submissions received during the first non-statutory public consultation; and
- Issues raised during meetings with community forum, resident groups and one-on-one meetings with directly impacted landowners.

As part of this review, a number of new design options were developed for consideration in specific areas where issues were identified. These new design options were subject to further options assessment. The key route developments between the first and the second round of non-statutory public consultation are summarised below:

- Provision of a two-way cycle track from the Lucan Road at N4 Junction 3 inside the boundary of the Hermitage Golf Club and Hermitage Medical Clinic, then along the Old Lucan Road and through

- Palmerstown where it connects to existing facilities leading to Chapelizod village, with this two-way cycle track forming part of Primary Cycle Route 06 included in the GDA Cycle Network;
- Relocation of the existing bus stops at Liffey Valley Shopping Centre some 200m further west to provide more weaving length for the buses to negotiate the M50 interchange more safely, improved segregation from the existing carriageway, and a new bridge over the N4 that links with the proposed bus interchange within Liffey Valley Shopping Centre, to provide higher quality pedestrian facilities;
 - Introduction of a westbound, bus only, right turn lane at the Oval junction to facilitate buses turning into Palmerstown village;
 - Accommodation of a new eastbound right turn lane at the junction of the R148 Con Colbert Road with Memorial Road, to the tie-in with the proposals contained in the Liffey Valley to City Centre Core Bus Corridor which proposes to make Memorial Road two-way;
 - The introduction of a northbound right turn lane at the South Circular Road junction to allow vehicles to turn right from the South Circular Road to St Johns Road West; and
 - Removal and replacement of additional trees along St Johns Road West so that facilities for both taxis and bicycles can be provided on the approach to the train station.

1.6.3 Preferred Route Option Consultations

1.6.3.1 Community Forum

A Community Forum meeting took place in West County Hotel, Chapelizod, on 18 September 2019 for community representatives and elected representatives. The meeting involved the presentation of an overview of the route developments, and with the use of an independent chairperson, the representatives were given the opportunity to ask questions of the BusConnects Infrastructure team and provide feedback.

1.6.3.2 Preferred Route Option Consultation Overview

The PRO, or second round of public consultation took place from 04 March 2020 to 17 April 2020. The public were invited to make written submissions in relation to the published proposals to the BusConnects Infrastructure team either through an online form, by email or by post.

Due to the COVID-19 pandemic, all planned events scheduled after 12 March 2020 were cancelled. In deference to the submissions which had already been received, the decision was made not to cancel this non-statutory consultation phase. However, due to the introduction of COVID-19 public health restrictions further on-site or face-to-face public engagement was cancelled.

Following the EPR submissions review of the proposals, there were some changes to the number of properties that were potentially impacted. 14 letters were prepared and delivered on 13th July 2020 to properties either continuing to be potentially impacted, or newly potentially impacted, with recipients invited to schedule meetings with the BusConnects Infrastructure team if they wished to discuss the proposals on an individual basis.

Consequently, presumably due to the Covid impacts, there were just 16 submissions received relating to the Proposed Scheme, and no landowner meetings were possible. The submissions ranged from individual submissions by residents, commuters and local representatives, to detailed proposals from various associations and private sector businesses.

Design development and planning for the Proposed Scheme continued, and the BusConnects Infrastructure team determined to run an additional round of public consultation in November 2020 to complete the non-statutory public engagement prior to finalising the PRO. The third round of public consultation took place from 04 November 2020 to 16 December 2020.

With the continuing effect of the COVID-19 pandemic and associated restrictions, the third Public Consultation was held largely virtually. A virtual consultation room for the Proposed Scheme was developed and virtual access to the room was facilitated. Along with offering a call back facility, the room provided a description of the Preferred Route from start to finish with supporting maps and included information of all revisions made since the previous rounds of public consultation as well as other supporting documents. Over the 6 weeks of the consultation, users visited the virtual consultation room for the Proposed Scheme and a total of 200 submissions were received

relating to the Lucan to City Centre Core Bus Corridor. A further Community Forum virtual consultation call was also held on 11 November 2020 as part of the third round of non-statutory consultation.

As per the previous rounds, those properties continuing to be either potentially impacted; newly potentially impacted; or no-longer potentially impacted were written to directly to receive information on the consultation in advance of any wider publication of the proposals. One-to-one meetings were offered via Zoom or over the phone for those who wished to discuss the proposals further in relation to their own property with the minutes being recorded as part of the consultation process. 16 letters were sent on 02 November 2020 and four meetings took place.

As per previous rounds the public were invited to make written submissions in relation to the published proposals to the BusConnects Infrastructure team either through an online form, by email or by post.

There were 216 submissions received over second and third phases of public consultation (March / April 2020 and November / December 2020). Key issues raised are presented in the following sections.

1.6.3.3 Lucan to City Centre – Key Issues Emerging from the PRO Consultation Process

The key issues emerging from the non-statutory PRO consultation process were as follows:

- Scheme Route – Starting point for the Proposed Scheme at N4 Junction 3;
- Cyclist safety – cyclists not being prioritised in Palmerstown or Chapelizod;
- Cyclist safety – raised tables & continuity;
- Pedestrian safety at crossings;
- Old Lucan Road – 2-way cycle track and speed limit;
- Kennelsfort Road Junction – staggered pedestrian crossing;
- Concerns about increased congestion;
- Disability access – junctions generally, tactile paving and bus stops;
- Pedestrian priority zone – width of provision;
- Starting point for the Proposed Scheme at N4 Junction 3 - It was felt that starting the Scheme at the N4 Junction 3 would be a missed opportunity and it should extend as far as Junction 5 in conjunction with the provision of a Park and Ride facility with the addition of a new train station (at Collinstown) at Junction 5;
- Cyclist Safety - A number of submissions raised cyclist safety as an area of concern across the route. It was stated that the 2-way cycle track should be continued across private accesses without breaks by providing raised tables and a change in road colour to provide priority to cyclists. Furthermore, when the cycle track runs through residential areas/along minor roads, it was felt raised tables should be provided to ensure cyclists have priority over these junctions and ensure motorists have an increased awareness of cyclists and slow their speeds on the approach to the cycle track;
- Cyclist Safety - Along Old Lucan Road it was noted that existing on road car parking occurs, which it was felt could pose a safety concern for cyclists traveling along Old Lucan Road, as parked vehicles could open their door into oncoming cyclists. As a result, parking restrictions were suggested. Safety concerns were also raised in regard to the taxi queuing lane running parallel to the cycle track along St. Johns Road West; it was suggested protective measures such as planters or bollards could be provided;
- Cyclist Safety - Along the Lucan Road it was felt that cyclists were not provided with enough protection and certain conditions may push them into the bus lane. A request was made to provide a vertical safety barrier or hedgerow along the 2-way cycle track between the bus lane and cycle track to protect cyclists. Continuing on from Lucan Road the access route to Hermitage Golf Club should provide traffic calming measures and shared car and cycle signage to provide awareness of cyclists and improve cyclist safety;
- Cyclist Safety - At the South Circular Road junction, it was requested that consideration should be given to removing the left-hand slip road along South Circular Road (southbound) as it was felt it posed a safety risk for cyclists travelling from Phoenix park to Kilmainham, due to potentially fast-moving vehicles crossing the bike lanes. The removal of these lanes will also help widen pedestrian

facilities. It was also requested that consideration should be given for cyclists turning left onto St. Johns Road West from South Circular Road as it was felt there is inadequate protection provided for cyclists. Concerns were also raised at the number of cyclist and pedestrian conflicts and that these could be reduced or clarified at the junction, with it been suggested 'Dutch Style' junctions should be incorporated along with zebra crossings over cycle tracks to help provide a more legible road layout and reduce conflicts;

- Pedestrian Safety - The submissions contended that there were several instances along the route where the design does not comply with various design standards such as 'The Design Manual for Urban Roads and Streets' (DMURS). Examples of given were:
- Pedestrian Safety - The pedestrian crossing widths at the South Circular Road junction; the DMURS states that a minimum width of 4.0m is required. The crossings should also provide adequate crossing times for some of the longer crossings at this junction, to allow the safe crossing of all pedestrian users;
- Pedestrian Safety - The crossing replacement to the east of the Memorial Road/Con Colbert Road junction should be widened and moved in-line with the junction as per the DMRUS; designs should also consider that this is a school crossing and pedestrians should be able to cross in a single step;
- Pedestrian Safety - Comments were also made about the safety of pedestrians at the proposed bus stops at Chapelizod Hill Road if vehicles come off the road; bollards were suggested to improve safety at this location;
- Pedestrian Priority Zones - Shared areas along the route were raised several times in the submissions as an area of dislike and concern due to possible conflict between pedestrian users, cyclists and disabled users. The main area of concern is located along the R148 immediately east of Palmerstown village on the approach to the R112 slip to Chapelizod village, where suggestions were made to further widen the shared area to provide segregation between cyclists and pedestrian users, by reducing the median and relocating the back of the footway beyond the existing wall;
- Congestion Increase - There were locations where the submissions felt the proposed scheme would exacerbate traffic congestion along the scheme. It is suggested that southbound traffic over Ballyowen Road Bridge over the N4 will back up, as vehicles wait to turn right onto the west bound N4 slip road. It was suggested that preserving the current filter lane and removing the proposed bus lane over the bridge would help reduce the increase of congestion in this location. There were also concerns raised about the proposed reduction from 2 lanes to 1 lane of general traffic over the M50 to accommodate the proposed bus lane as it was believed this would further exacerbate traffic congestion on the N4;
- Congestion Increase - Retaining the existing taxi queuing lane along St. John's Road West was also raised as there was a concern that taxis will stack back past the proposed taxi queuing lane and block buses in the bus lanes increasing congestion on the approach to Heuston station;
- Congestion Increase - Kennelsfort Road Junction - Multiple comments were made in relation to the proposed staggered toucan crossing over Palmerstown bypass at the Kennelsfort Road Junction, relating to the requirement for, and design of, the proposed crossing. The proposed crossing was felt unnecessary and considered unnecessary given the existing pedestrian footbridge and ramps. One safer alternative for pedestrians that was proposed in-place of the staggered crossing was the use of stairs for the existing footbridge. Other comments commented on the inadequacy of the staggered crossing for pedestrians and cyclists on the central island stating pedestrians and cyclists should be able to cross in one movement;
- Old Lucan Road - A number of issues were raised about the proposed changes along Old Lucan Road. One was the current speed along the road, and it was suggested that few people in the area knew the 30kph speed limit due to the lack of signage along the road, which should be addressed. It was suggested signage should also be provided to ensure cyclists know the cycle route continues along the Old Lucan Road towards the Applegreen Petrol Station;
- Old Lucan Road - Residents also raised security concerns for the off-line two-way cycle track running along Old Lucan Road, suggesting further passive surveillance and improved lighting should be incorporated along the route or in an ideal situation the route should be relocated onto the N4 to provide an on-line route;
- Old Lucan Road - It was also stated that cars are parked along Old Lucan Road where the cycle route has been proposed and concerns were raised that car users will continue to do so after the cycle track has been completed. It was suggested that extra restrictions should be provided along the route to prevent vehicles from parking on the cycle track;

- Old Lucan Road - It is thought that the bus lane connecting the eastern end of Old Lucan Road and Chapelizod bypass is likely to be abused by locals. As a solution this section of the road should be coloured as a bus lane to prevent private vehicles from using the route;
- Disability Access - The safety of disabled users of the scheme was raised in multiple comments that were of a general nature. It was stated that bus stop locations at greater than 400 metre intervals are not acceptable for people with disabilities, children or the aging population. The view was expressed that uncontrolled junctions are dangerous for the visually impaired. It was suggested that footpaths should be of one material, preferably a non-slip surface with grainy feel so guide dogs easily navigate. It was stated that at crossing points, tactile paving should be used, and the kerb should slope gently to allow wheelchair users and prams to cross the road safely. Directional tactile paving should also be implemented to show the direction of the crossing. Where bus shelters are provided, they should be located as close to the edge of the path as possible and should not hinder pedestrians passing behind them. Tactile paving should also be used to warn of their presence; and
- Suggestions and New Ideas - A number of suggestions were made, mainly in regard to design amendments. A number of these suggestions relate to design changes at junctions and include:
 - The verge on the northern side of the current cycle track running parallel to the N4 prior to the bridge over the M50 has encroached on the cycle track and some form of retaining wall is required to control this;
 - The cycle track should continue along Old Lucan Road and tie into the shared space at the Applegreen Petrol Station, to increase cyclist safety as there will be increased bus movement along the road;
 - Secure bicycle parking should be provided at the proposed Chapelizod Hill Road bus stops;
 - At the Memorial Road/Con Colbert Road crossing the pedestrian crossing to the west of Memorial Road should be retained;
 - Bus stops on Con Colbert Road should be moved closer to the South Circular Road junction to allow better connections to other radial and local services;
 - Consideration of dedicated bus services through Chapelizod and surrounding areas should be considered, due to the increased bus demand in the area;
 - Possible conflict could happen as traffic heading northbound from St. John's Rd change lanes ahead of the centre bus lane on the Frank Sherwin Bridge. Removing the bus lane between the Luas crossing and the bridge would allow traffic to merge with plenty of time;
 - Two- way cycle track is not required down Kennelsfort Road Lower as there is insufficient traffic volume to justify the addition. Advisory cycle lanes should be provided in both the north and south lanes as an alternative;
 - Bus lane break at the end of Liffey Valley Shopping Centre bus stops should be reduced and either a yellow box or traffic signals provided to keep the N4 bus lane passable;
 - Continuing the two-way cycle track around the north west side of the Heuston Station junction would remove the need for an additional traffic light phase for cyclists to cross. If the cycle track is brought in line with the bus stops in front of the station, cyclist can cross the road either when the trams pass or via the Toucan crossing;
 - The right-hand turn slip should be removed on Ballyowen Bridge onto the N4 westbound if not justified by the traffic count. Instead, two no. 3.5m bus lanes should be provided, with two no.3.0m traffic lanes, and cyclists sharing the bus lanes locally; and
 - BusConnects should be continued along Lucan Road to bus stop opposite Lucan Garda Station due to the frequency of the route. Cyclists at this location should be placed inside St. Edmundsbury Hospital Wall as there are concerns for cyclist safety.

The key issues emerging from the third phase of pre-application PRO non-statutory public consultation were as follows:

- Congestion on the Ballyowen Road at the N4 junction 3;
- Cyclist safety and facilities, particularly at Ballyowen Road and South Circular Road junction;
- Pedestrian safety and facilities, particularly at South Circular Road junction;
- Loss of parking in Palmerstown village;
- Bus stops and bus services;

- Other – Positive feedback, noise impact and tree loss;
- Start of Core Bus Corridor - A few responses were received regarding the start of the Core Bus Corridor route. It was felt that starting the Scheme at N4 Junction 3 would be a missed opportunity and it should extend to junction 5 to support the growth of Lucan. It was also suggested that the CBC and associated bus services should be extended as far as Celbridge;
- Ballyowen Road Congestion - The majority of the 129 comments regarding Ballyowen Road related to concerns about congestion that would arise from the proposals. Most submissions contended that the replacement of the right turn lane on Ballyowen Bridge with a short right turn pocket for vehicular traffic heading towards the N4 westbound on-slip would lead to excessive queues and delays to traffic heading south along Ballyowen Road. Some comments mistakenly thought the right turn movement would not be permitted at all. All the submissions felt that this would cause a build-up of congestion for traffic trying to proceed along Ballyowen Road and would cause significant delays, particularly affecting the schools, community groups and businesses in the area;

It was noted that the proposed removal of the right turning lane across the bridge was to allow cycle tracks to be provided in each direction. Many comments suggested improved alternative cycle facilities could be better provided by the inclusion of a cycle lane on the existing footbridge, or a new adjacent cycle bridge, recognising the need for improved facilities. Some comments argued that providing cycle lanes on the main road bridge was excessive and not required as there are few cyclists currently using the route, whereas others cited the lack of safe facilities as a barrier to cycling;

Some submissions also felt that the proposed scheme would exacerbate traffic congestion at the R136 Ballyowen Road / R835 Lucan Road junction as a result of the removal of the left turn slip lanes. It was suggested that northbound traffic heading for Lucan village would back up over Ballyowen Road Bridge and lead to all the junctions on Ballyowen Road become congested and gridlocked;

- Ballyowen Road Cycle Facilities – Cycle facility provision at junctions raised and suggesting the provision of a new cycle bridge across the N4 to accommodate a right turn lane; also, positive support for the two-way cycle track on Lucan Road;
- Ballyowen Road Bus Route – positive support for the increase in bus services and routes;
- Ballyowen Road Safety / layout – pedestrian and cyclist safety at junctions – specifically on R136 Ballyowen Road and R835 Lucan Road;
- Loss of Trees - Whilst some submissions provided support for the proposed two-way cycletrack along the north side of Lucan and the N4, including the section running past the Hermitage Golf Club, a small number of submissions commented on the loss of trees particularly along Lucan Road towards the roundabout accessing the Lucan Retail Park and along the boundary of the golf course. These comments requested that all other alternatives be explored to avoid, or at least minimise the number of trees lost;
- Liffey Valley Shopping Centre Bus Stops / Old Lucan Road west of M50 - The submissions made in respect of this area came from residents along Old Lucan Road and while generally supportive of the principle of BusConnects and the two-way cycle track, they did highlight a number of concerns. These included the loss of visual and noise screening along the N4 as a result of the removal of existing trees, a risk of anti-social behaviour and security associated with the proposed ramps and footbridge, as well as querying the frequency of speed ramps proposed along Old Lucan Road;

One submission stated that some of the existing trees were planted by residents to reduce the noise pollution and the scheme, as proposed, would lead to increased noise and visual impact / overlooking. The possibility of CCTV to monitor security of the bus stops and compliance with the bus lane was also raised;

- Palmerstown Loss of Parking – Concerns raised about loss of parking along Old Lucan Road east of the village centre, citing a lack of need for the proposed two-way cycle track;
- Palmerstown Congestion – Concerns raised in relation to Kennelsfort Lower Road Junction, the Oval Junction and from a general increase in traffic in the village, with associated impact on the village feel of the road;
- Palmerstown Bus Services – The view generally expressed was that there was no need for Bus route 80 to travel along Old Lucan Road;

- Palmerstown Cycle facilities – While there was some support for the two-way cycle track along the full length of Old Lucan Road, there was a large number of submissions that queried the need for the proposed two-way cycle track along Old Lucan Road, primarily along the section east of the village centre where there was loss of parking. Also, the comments questioned why the cycle facilities did not continue through Chapelizod village;
- Palmerstown Safety – Concerns were raised in respect of the Kennelsfort Road Lower and the impacts of the recently approved hotel expansion and Strategic Housing Development had not been accommodated. In addition, concerns were raised about HGV manoeuvres on Old Lucan Road west of the village centre and at The Oval junction;
- Palmerstown Bus Stop – Some comments made it clear they didn't want the new bus stops located outside their houses;
- Palmerstown Other Comments - Commuters use Palmerstown as a park and ride, better pedestrian facilities required, and incorrect spelling of Palmerstown on road signage;
- Palmerstown Loss of Parking / Cycle Facilities - the largest number of the 107 comments relating to Palmerstown objected to the loss of pay and display parking along Old Lucan Road east of the village centre, in particular the section east of Mill Road. This issue was raised by the residents of Woodfarm Cottages, Red Cow Cottages and St Fintan's Terrace, none of whom have off-road parking / driveways. Many submissions stated that during the day all the parking is full, and residents find it difficult to find a space. It is understood that each resident is allowed to have one resident permit and one visitor permit per property;

It was also stated that the relocation of the disabled parking space from across the north side of Old Lucan Road to the south side will hinder those in wheelchairs due to the increased distance and crossing of the road to reach local amenities in the area.

In all the submissions relating to the loss of parking it was stated that there was little demand for a two-way cycle track, that the road was already had a 30km/hr limit and as such the view was expressed it would be acceptable for cyclists to use the road with general traffic;

A small number of comments made similar points about the lack of cycle demand for a two-way cycle facility along Old Lucan Road west of the village centre, although concerns here related to road narrowing and the cycle track crossing private driveways as opposed to loss of parking;

- Congestion / Junctions - In terms of congestion, concern was expressed about the introduction of a Toucan crossing at the R148/ Kennelsfort Junction, leading to the loss of a left turn movement at that location. Some submissions also felt the crossing is not required while a footbridge is available to cross the junction;

Some of the responses expressed concern about the design of the junction with the Oval as the bus will be required to cross two lanes of heavy traffic at peak hours from the R148 at the Circle K service station. They felt this is unlikely to occur during peak hours due to the current congestion. Additionally, there was concern the congestion will increase at the junction with the removal of the left turn at Kennelsfort Road Junction and will be further exacerbated by the new recently approved major developments within Palmerstown and the new bus route along Old Lucan Road leading to long delays;

Concern was expressed about the proposal for exit from Palmerstown Village at The Oval/R148 junction to become a two-way link to allow for the bus to enter for the east, citing inadequate width. Furthermore, the view was expressed that the removal of the left turn movement at Kennelsfort Road Lower would lead to general traffic increasing throughout the village in a heavily congested area with traffic having to use the R148/the Oval junction instead;

- Bus Services / Bus Stop - Concern was expressed about double-decker buses along Old Lucan Road increasing the safety risk to pedestrians, suggesting wheelchair users would be affected the most. A few comments expressed the view that Old Lucan Road east of the village centre was inadequate for two buses to enter and exit at the same time;

A number of comments questioned the need for the no 80 bus service to run along Old Lucan Road at all, suggesting instead that it remain on the R148 and avail of the bus stops there. Allied to this, some submissions stated they did not want a new bus stop outside their properties on Old Lucan Road. Some submission also expressed the view that the combination of the above issues would adversely impact the village feel of the road;

- Safety - Some comments were made in relation to the proposed toucan crossing over Palmerstown bypass at the Kennelsfort Road Junction, relating to the requirement for, and design of, the

proposed crossing. The view was expressed that the proposed crossing was unnecessary and unsafe given the existing pedestrian footbridge and the addition of traffic lanes. The view was expressed that a Toucan crossing would not be safe for pedestrians citing drivers frequently breaking the red lights. It was felt that the existing bridge was a safer alternative for pedestrians;

- Cycle Facilities at start of Chapelizod Road - Some submissions noted that cycle track does not continue east of Palmerstown towards Chapelizod;
- Con Colbert Road and Memorial Road Junction Bus Stop – Request for new bus stops at the footbridge over the eastern end of the Chapelizod Bypass by the Liffey Gaels GAA club;
- Con Colbert Road and Memorial Road Junction Cycle facilities – The cycle tracks along Con Colbert Road were too narrow for Primary Cycle route 7A;
- Con Colbert Road and Memorial Road Junction Pedestrian facilities – The safety for pedestrians crossing the Memorial Road was highlighted as a concern, particularly for school children. The view was expressed that at present drivers frequently breaking the red lights;
- Con Colbert Road and Memorial Road Junction Rat Running – Concern was expressed that the new inbound right turn lane at the Memorial Road junction would result in traffic rat running through Inchicore to avoid the South Circular Road junction;
- South Circular Road Junction Pedestrian Facilities and Cyclist Facilities - The standard of the pedestrian facilities and cyclist facilities, and the safety of vulnerable road users, were the overriding common themes of all the 135 submissions and comments in relation to this junction. Many expressed concern that the existing facilities were of a sub-standard nature. Also, disappointment was expressed that the BusConnects proposals increased the length of some of the pedestrian crossings from six traffic lanes to eight. In particular, concerns were raised in relation to the safety of school children walking and cycling through the junction, with many submissions requesting that a pedestrian bridge be provided over the junction. The view was also expressed in the majority of the submission that the existing urban realm was of a poor quality. Specific safety concerns were raised about the need for enforcement for vehicular traffic breaking red lights;
- Bus Stop Locations - The new stops on the Chapelizod Bypass were welcomed but queries were raised in respect of land take, wheelchair accessible, materials / finishes, lighting and security. Elsewhere suggestions were made about new bus stops for future development proposals on St John's Road West and concerns expressed about pedestrians having to cross the cycle track to enter/exit bus;
- Existing Cyclist / Pedestrian Bridge over M50 - Some comments welcomed the new two-way cycle facility along the N4 and Old Lucan Road and requested that the existing cyclist / pedestrian bridge over M50 be upgraded;
- Congestion over the M50 - Some concern was expressed in relation to the potential for future congestion over the M50 as a result of one of the general traffic lanes being replaced with a bus lane; and
- Taxi Queuing Lane Safety at St John's Road West - Specific safety query was raised in relation to the inbound cycle track running alongside the taxi queuing lane on St John's Road West inbound approaching Heuston Station.

The issues raised during the third Non-Statutory Public Consultation have been considered in the further development of the PRO. The PRO proposals were further amended where appropriate, while still ensuring attainment of the Proposed Scheme objectives, to address the issues raised in submissions, including incorporating suggestions and recommendations from local residents, community groups and stakeholders where appropriate. These amendments were incorporated into the designs and formed the Preferred Route which has been developed for statutory public consultation of the Proposed Scheme.

Design changes which were adopted as part of the final PRO included:

- Many concerns were raised about cyclist safety and the potential for congestion on the Ballyowen Road at Junction 3 of the N4, associated with the provision of segregated cycle tracks via the removal of dedicated right turning lane for traffic heading westbound on the N4. Detailed traffic analysis of the signalised junctions at this location identified that congestion was likely to occur in the future to a degree that would impact on the movement of bus services and general traffic alike. In response to this, alternative proposals have been developed to provide a new combined pedestrian and cyclist bridge as a replacement for the existing footbridge over the N4 at this location. A two-way cycle track has been designed along the eastern side of Ballyowen Road, connecting

this new bridge to the Lucan Road junction on the northern side and to the Hermitage Road junction on the southern side;

- R148 Palmerstown bypass EB Left turn lane added at Kennelsfort Road Lower junction;
- At the bus stops for the Liffey Valley Shopping Centre the existing pedestrian and cyclist bridge over the N4 has been retained, in addition to the new pedestrian only bridge being provided to serve the relocated and extended bus stops;
- In Palmerstown village concerns were raised about the potential for congestion at the Kennelsfort Road and Oval junctions on the Palmerstown bypass, along with the loss of car parking spaces on the Old Lucan Road east of the village centre. Following detailed traffic analysis of the two signalised junctions the layout of the Oval junction has been amended to provide an additional lane to cater for the increase in left turning traffic exiting the village. In addition, further car parking has been accommodated on the Old Lucan Road east of the village centre while maintaining the proposed two-way cycle track; and
- A large number of submissions highlighted concerns about pedestrian and cyclist safety at the South Circular Road junction. Following detailed traffic analysis, the layout of this junction has been amended to reduce the number of general traffic lanes, thus reducing the length of the pedestrian crossings, as well as releasing additional road space for improved cyclist facilities and landscaping.

The following list highlights the main scheme changes between the published EPR Option and the PRO:

- A significant improvement in cyclist facilities from the start of the Proposed Scheme on the R136 Ballyowen Road at N4 Junction 3 to the start of the R148 Chapelizod bypass on the east side of Palmerstown village, comprising;
 - Provision of a two-way segregated cycle track on the east side of the R136 Ballyowen Road between Hermitage Road and the R835 Lucan Road, including a new shared pedestrian and cyclist bridge on the east side of the R136 Ballyowen Road;
 - Provision of a two-way segregated cycle track on the northside of the R835 / N4 Lucan Road between Junctions 3 and 2 of the N4, requiring land acquisition from the adjacent landholdings, including the Hermitage Golf Club, Sureweld and Hermitage Medical Clinic;
 - Provision of a two-way segregated cycle track on the southside of the Old Lucan Road between the N4 Junction 2 and the existing pedestrian and cyclist bridge over the M50;
- Provision of a two-way segregated cycle track on the northside of the Old Lucan Road in Palmerstown from the existing pedestrian and cyclist bridge over the M50 to the start of the Chapelizod bypass.
- Relocation of the existing bus stops at Liffey Valley Shopping Centre some 200m further west and a new pedestrian bridge over the N4 that links with the proposed bus interchange within Liffey Valley Shopping Centre;
- Introduction of a westbound, bus only, right turn lane at The Oval junction to facilitate buses turning into Palmerstown village;
- The new bus stops on the R148 Chapelizod bypass at Chapelizod Hill Road are provided with laybys and are accessed by steps and ramps both in-bound and out-bound. The steps and ramps to the new in-bound bus stop on the Chapelizod bypass have been moved to the south side of Chapelizod Hill Road;
- At the junction of the R148 Con Colbert Road with Memorial Road, while the junction has been designed to tie-in to the existing one-way layout of Memorial Road, consideration has been given to the tie-in with the proposals contained in the Liffey Valley to City Centre CBC, which proposes making Memorial Road two-way. To facilitate this a new eastbound right-turning lane on the R148 Con Colbert Road could be accommodated within the proposed junction layout;
- The introduction of a northbound right turn lane at the R111 South Circular Road junction to allow vehicles to turn right from the R111 South Circular Road to R148 St John's Road West;
- Removal and replacement of additional trees along St John's Road West so that facilities for both taxis and bicycles can be provided on the approach to the train station;
- The provisions of a new outbound bus layby on St John's Road West opposite Heuston Station, requiring land acquisition from the lawned area in front of Dr Steevens' Hospital;
- The layout of all bus stops along the route have been enhanced to the latest design guidance;
- Some bus stop locations have been optimised to allow better connectivity for bus passengers; and
- Pedestrian and cycle facilities at all junctions have been updated to reflect the latest design guidance with a view to providing improved cycle provision and safety.

The resulting Proposed Scheme is described in Chapter 4 (Proposed Scheme Description).

1.7 Consultation with Prescribed Bodies and Other Consultees

1.7.1 Consultation and EIA Process

In addition to the extensive Non-Statutory Public Consultation on the Proposed Scheme, as outlined in Section 1.6, the BusConnects Infrastructure team undertook consultation on the EIAR with certain prescribed bodies and relevant non-statutory consultees.

Consultations were also conducted with organisations such as the National Parks and Wildlife Services (NPWS), Transport Infrastructure Ireland (TII) and relevant local authorities, and these are considered in the development of the relevant impact assessments chapters in Volume 2 of this EIAR.

1.7.2 Prescribed Bodies and Interested Parties

In addition to meaningful consultation with the public concerned, including affected landowners (see Section 1.7.3) consultations were also undertaken with Dublin City Council (DCC) and South Dublin County Council (SDCC). Consultation was also undertaken with the prescribed bodies and interested parties outlined in Table 1.6 with regard to the approach to the EIAR.

Table 1.6: Prescribed Bodies and Interested Parties

Prescribed Bodies and Interested Parties	
An Chomhairle Ealaíon (Arts Council)	South Dublin County Council (SDCC)
An Taisce	Health Service Executive (HSE)
Dublin City Council (DCC)	The Heritage Council
Department of the Environment, Climate and Communications	Inland Fisheries Ireland (IFI)
Development Applications Unit (DAU) - Department of Culture, Heritage and the Gaeltacht (DCHG)	Irish Water
Department of Transport	Office of Public Works (OPW)
National Tourism Development Authority trading as Fáilte Ireland	Transport Infrastructure Ireland (TII)
Geological Survey Ireland (GSI)	Waterways Ireland

Where practicable, the information and advice received from the consultation process was subsequently incorporated into the design of the Proposed Scheme and addressed in the relevant chapters of the EIAR. Issues raised during the consultation process with the prescribed bodies and interested parties included the following:

- Development Applications Unit (DAU) – Department of Housing, Local Government and Heritage. Consultation meeting held on 5 February 2020 to apprise the DAU of BusConnects and the envisaged approach with regard to EIA / AA;
- Development Applications Unit (DAU) - Department of Culture, Heritage and the Gaeltacht. Comments provided related to the assessment of the impacts of the Proposed Scheme on biodiversity, the completion of ecological surveys (such as trees, hedgerows, bats, birds etc.) alien invasive species, mitigation and monitoring measures and Construction Environmental Management Plans (CEMP);
- Dublin City Council (DCC) comments in relation to the BusConnects Dublin - CBC Infrastructure Works related to transport, air quality, noise, built heritage, street lighting, utility infrastructure, surface water management / flood risk, landscaping, biodiversity and integration with other transportation projects. Specifically, DCC requested that the EIAR should address alternatives, cumulative impacts, and mitigation. In relation to the Proposed Scheme DCC identified protected structures, Conservations Areas, historic paving and gateways etc. which have the potential to be impacted due to the Proposed Scheme;
- South Dublin County Council (SDCC) comments in relation to the BusConnects Dublin - CBC Infrastructure Works related to the following: traffic flow maintenance, existing traffic speed controls,

car parking, construction compounds, work time restrictions, active travel protection, drainage/flood risk, dirt and dust controls, noise, air quality, protection of public realm infrastructure and emerging cycle routes. In relation to the Proposed Scheme SDCC provided comments on the commencement of the route, tree loss, loss of car parking spaces, access during the Construction Phase, and junction design into Palmerstown Village and The Oval;

- Health Service Executive (HSE) comments related to the assessment of likely significant impacts on sensitive receptors, surface water, groundwater, air, noise, vibration, dust and on content of Construction Environmental Management Plans (CEMPS);
- Inland Fisheries Ireland (IFI)'s submission identified each of the rivers to be crossed as part of the BusConnects Dublin - CBC Infrastructure Works and provided a brief summary of their importance. Additionally, IFI provided comments on the design, in-stream works and mitigation measures to be implemented;
- The Environmental Health office of the Health Service Executive provided recommendations in relation to the management of potential pollutants and discharge entering surface waters, the design of suitable drainage systems and storage of fuels and chemicals; and
- Geological Survey Ireland (GSI) were consulted on 21 May 2021, to discuss the BusConnects proposals, and the proposed approach to the assessment of Land, Soils, Geology and Hydrogeology.

1.7.3 Landowners

Since the initiation of the pre-application public consultation process in November 2018 there has been ongoing engagement with landowners, and / or anyone with an interest in potentially impacted properties or lands along the corridor of the Proposed Scheme, as the design development has progressed.

As set out in the Consultation Section (Section 1.6), during each round of public consultation those landowners identified as being either potentially impacted or no-longer potentially impacted were written to directly to receive information on the consultation in advance of any wider publication of the proposals. One-to-one meetings were offered on a face-to-face basis pre-COVID-19, and via Zoom or over the phone since March 2020, for those who wished to discuss the proposals further in relation to their own property with the minutes being recorded as part of the consultation process. Over the three rounds of consultation 44 letters of this kind were issued.

In addition, 2 letters were issued in July 2020 to request access to properties to undertake more detailed noise or topographical surveys.

Throughout the planning process any requests for meetings, phone conversations, or other requests for information have been accommodated where possible. Many of the submissions received during consultations have included those from potentially impacted owners and as with all other submissions they have been considered in the design development.

Most recently during June 2021, 21 letters (registered) have been issued to properties likely to be the subject of the Proposed Scheme Compulsory Purchase Order (CPO) process seeking to engage with them to ascertain ownership details (or to confirm ownership details based on Property Registration Authority – Registry of Deeds referencing research), or to ascertain any others with an interest in the property / lands. Follow-up conversations have been facilitated as a result of these letters on request.

Over the course of the engagements, affected property owners have had the opportunity to discuss, among other things, the following aspects with the BusConnects Infrastructure team:

- Overall scheme proposals and potential impacts;
- Timelines for the scheme design development and associated EIAR assessment;
- Procedural matters such as planning and CPO process;
- Specific details of impact of scheme on landowner property including approximate extent of encroachment; and
- General information around reinstatement and accommodation works.

1.8 Difficulties Encountered During the Preparation of the EIAR

The primary difficulty encountered during the preparation of the EIAR was the onset of the COVID-19 pandemic in March 2020 and the ensuing restrictions which continued into 2021. On site and face-to-face consultations for the PRO Non-Statutory Public Consultation (which had commenced on 04 March 2020) was suspended when it was underway with all remaining planned events cancelled. However, the consultation remained open and continued to accept written submissions.

The third round of public consultations (November / December 2020) was largely virtual (either by online virtual consultation rooms / Zoom meetings or telephone contact). Subsequent engagement with interested parties and landowners continued via virtual means.

It is considered that in spite of the COVID-19 restrictions comprehensive consultations were undertaken to inform design development and EIAR preparation.

With regard to EIAR baseline surveys, they were either undertaken prior to COVID-19 restrictions coming into force or were undertaken within the requirements of the Governments COVID-19 guidelines. The restrictions did not give rise to any substantive effects on data gathering and consequently it is considered that the EIAR prepared is sufficiently robust in nature.

1.9 References

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SDCC (2022). South Dublin County Council Development Plan 2022-2028.

SDCC (2008). Liffey Valley Town Centre Local Area Plan (extended 2018).

The Planning Inspectorate (2019). Advice Note 17: Cumulative Effects Assessment Relevant to Nationally Significant Infrastructure Projects

Directives and Legislation

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

Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU

No.30 of 2000 – Planning and Development Act 2000 (as amended)

S.I. No. 600 of 2001 – Planning and Development Regulations 2001 (as amended)

Roads Act 1993 (as amended)

S.I. No 119 of 1994 - Roads Regulations 1994 (as amended)

Dublin Transport Authority Act 2008 (as amended)

S.I. No. 279/2019 – European Union (Roads Act 1993) (Environmental Impact Assessment) (Amendment) Regulations 2019