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ENVIRONMENTAL IMPACT ASSESSMENT REPORT

TEN-T Priority Route Improvement Project, Donegal

Chapter 16: Material Assets: Non-Agriculture

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BARRY TRANSPORTATION

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Tables

List of Abbreviations

The following is a list of abbreviations used within this chapter of the Environmental Impact Assessment Report (EIAR).

TEN-T List of the 'Material Assets-Non-Agriculture' Abbreviations

List Abbreviations	
AER	Annual Environmental Report
CIA	Cumulative Impact Assessment
C&D	Construction and Demolition
CUWR	Connacht-Ulster Waste Region
DCNR	Department of Communications and Natural Resources
DETI	Department of Enterprise, Trade & Investment
DSL	Digital Subscriber Line
FRS	Flood Relief Scheme
GFN	Global Financial Network
GPR	Ground Penetrating Radar
HP	High Pressure
HV	High Voltage
IW	Irish Water
LP	Low Pressure
LV	Low Voltage
MAN	Metropolitan Area Networks
MP	Medium Pressure
MV	Medium Voltage
OHL	Overhead Lines
RWSS	Regional Water Supply Scheme
SBR	Sequencing Batch Reactor
SID	Strategic Infrastructure Development
TSW	Trans frontier Shipment of Waste
UE	Uisce Eireann
UG	Underground
WAC	Waste Acceptance Criteria
WMU	Water Management Unit
WRZ	Water Resource Zone
WWTP	Wastewater Treatment Plant

16 MATERIAL ASSETS NON-AGRICULTURE

16.1 Introduction

The purpose of this chapter is to identify, describe and present an assessment of the likely significant effects of the Proposed Development on the topic of material assets – non-agricultural properties, major utilities, and waste.

16.1.1 Non-Agricultural Properties

Land is introduced as a factor to be identified, described, and assessed in an Environmental Impact Assessment Report (EIAR). Information to be submitted and assessed as part of an EIAR in respect of land should include details of 'land take' and land use requirements of the whole project during the construction and operational phases (DHLGH, 2018). This section of the Material Assets chapter considers potential impacts in relation to the land take associated with the proposed Compulsory Purchase Order (CPO) in relation to non-agricultural properties, including any demolition. Non-agricultural properties can include residential, commercial, or industrial premises, community or public facilities or other types of property that do not have an agricultural function.

Land take from agricultural properties, and impacts arising from agricultural severance, is addressed within Chapter 15: Material Assets Agricultural.

The assessment has considered the potential impacts of land take during the construction (permanent and temporary land take) and operational (permanent land take) phases of the Proposed Development as identified within Chapter 4: Project Description and detailed within Appendix C16.01. Broader impacts on community and socio-economic aspects, including impacts on the residential community, severance and tourism, are covered in Chapter 7: Population. Traffic impacts are considered in Chapter 6: Traffic & Transportation. Any effects arising from traffic, air quality or noise on human health are considered in Chapter 8: Human Health.

16.1.1.1 Statement of Competence

The land take assessments contained within this chapter have been prepared by Michelle Bennett, a qualified planner working within the RPS Environment, Planning and Renewables team. Michelle holds a Bachelor of Social Science (Hons) and a Masters of Regional and Urban Planning (Hons) from University College Dublin in 2000 and 2002 respectively. Michelle obtained a Certificate in Local Government Studies (Hons) from the Institute of Public Administration / National University of Ireland in 2005. Michelle is a Corporate Member of the Irish Planning Institute.

Michelle has 22 years of experience working in the field of planning, sustainable development and environmental impact assessment (EIA). Michelle has previously prepared and contributed to numerous Population / Socio-Economic assessments included in EIARs and non-statutory Environmental Reports (ERs) for projects including road and greenway infrastructure, electricity infrastructure, flood relief works, wind farms and related developments including grid connections, remediation projects and industrial facilities. Michelle has regularly prepared planning reports covering issues arising for the receiving population to accompany applications for planning consent where EIA has not been required or ERs were not prepared, with experience in infrastructure projects such as road improvement schemes and bridges; wastewater treatment plants, water storage facilities and related infrastructure; industrial facilities, including extensions, new processes and plant; waste management facilities; remediation projects; and tourist infrastructure. Michelle's experience also includes reporting to accompany applications for Compulsory Purchase Orders, including planning and land take assessments.

The chapter has been reviewed by Valerie Brennan, Business Unit Director of the RPS planning team in the Republic of Ireland. Valerie holds a BA International (Hons) in Geography and French (2001), along with a Higher Diploma in Education (2002) from the National University of Galway and a Master of Science in Town and Country Planning from Queens University Belfast (2004). Valerie is a Chartered Member of the Royal Town Planning Institute (RTPI) and a Corporate Member of the Irish Planning Institute. She is the Past

Chair of RTPI Ireland (having held the Chair role from 2022-2023), and a member of the RTPI Executive Committee.

Valerie is an infrastructure specialist and has an excellent variety of experience having worked in the public, private and semi-state sectors including periods of secondment / semi-secondment to Uisce Eireann, EirGrid and the Dublin Airport Authority and having worked as Senior Planning and Development Manager with Coillte for over 8 years. She has over 20 years professional planning experience advising on a wide range of strategic infrastructure, commercial and renewable energy projects, many of which have required EIA and comprise of linear infrastructure.

16.1.2 Utilities and Waste / Resources

This chapter considers and assesses the potential impacts on the material assets of the surrounding area during the construction, operational and maintenance phases of the Proposed Development. The material assets that are considered include:

Major utilities:

- Electricity
- Telecommunications
- Gas Supply
- Water and Wastewater
- Renewable Energy

Waste / Resources:

- Waste Facilities
- Waste stream generation

Waste is also discussed in Chapter 10: Land, Soil & Hydrogeology, Chapter 12: Air Quality and Chapter 13: Climate.

16.1.2.1 Statement of Competence

The Waste assessments contained within this chapter have been prepared by Mirela Sava, a qualified Environmental Engineer with over 18 years of experience, working within the Egis Engineering Ireland. Mirela holds a Bachelor of Science (Hons) in Environmental Engineer and a Master of Science in Water from the Polytechnic University of Tirana in 2005 and 2007 respectively. Mirela is a full member of Engineers Ireland and also a member of The Institute of Environmental Science. She is a Lead EIA Co-ordinator at Egis, where she leads and coordinates environmental inputs on a wide range of major infrastructure schemes, including national road upgrades, public transport projects, and wastewater treatment plant upgrades. She has extensive experience in preparing and technically reviewing EIAR chapters across multiple environmental topics, including Waste and Resources chapter, and has a strong background in environmental management, compliance, and sustainable design.

The Utilities assessments for Sections 1 and 2 contained within this chapter have been prepared by Eamon Cox, a qualified Civil Engineer with over 30 years of experience, working within RPS (a Tetratech Company). Eamon holds a Bachelor of Civil & Environmental Engineering (Hons) BE and a Diploma in Project Management. Eamon is a Chartered Engineer, CEng and a longstanding member of Engineers Ireland. Eamon is also a Registered Professional Consulting Engineer within the Association of Consulting Engineers of Ireland (ACEI) and a licensed Professional Engineer in the US (Massachusetts). Eamon has extensive experience in the design and construction of road related projects and is a qualified Road Safety Audit, team leader. Eamon's experience includes the feasibility and development of major transportation projects through options selection, preliminary and detailed design and the associated management of the EIAR / Environmental Reports and CPO process and in the construction of road schemes. This has included planning and design and management of utility infrastructure.

The Utilities assessments for Section 3 contained within this chapter have been prepared by Eamon Daly, a qualified Civil Engineer with over 30 years of experience, working with Egis Engineering Ireland. Eamon holds a Bachelor of Civil Engineering (Hons) BE, a Master of Engineering Science in Transportation Engineering MEngSc. Eamon is a Chartered Engineer, CEng and a Fellow of Engineers Ireland, FIEI. He is also a Fellow Professional Consulting Engineer, FConsEI ACEI. Eamon has extensive experience in the design and construction of road related projects. He has worked for on feasibility studies, preliminary and detailed designs including the management of the EIAR/Environmental Reports and CPO processes and in the construction of road schemes. This has included planning and design and management of utility infrastructure.

16.2 Methodology

16.2.1 Non-Agricultural Properties

16.2.1.1 Legislation and Guidance

The non-agricultural properties assessment has broadly followed the EIA methodology set out in Chapter 1: Introduction. The methodology and associated impact assessment have also had regard to the legislation as outlined in that chapter. While an initial assessment was undertaken prior to the publication of the TII Standard first published in 2024, PE-ENV-01108 Population and Human Health Assessment of Proposed National Roads (and revised in 2025), which covers demolitions and land take impacts to property, however in this chapter, this guidance has been incorporated into the assessment. The layout of the sample tables provided in the TII Standard (2025) have been modified to best present the information relevant to the assessment of the Proposed Development (See Appendix C16.01).

Zone of Influence

In discussing the zone of influence (ZoI) for property receptors, the TII Standard (2025) provides guidance in identifying a suitable extent from the development boundary. It advises this must be proportionate. For the assessment of certain broader potential impacts to population receptors, a 500m buffer is advised. However, in the case of demolition and land take it is considered that it is appropriate that the assessment in this chapter assesses only those properties affected directly and therefore the CPO boundary is taken as the ZoI, i.e. the ZoI is the footprint of the Proposed Development where land take from private properties is required either on a temporary or permanent basis or both and where there is therefore potential for impacts to occur. The ZoI will hereafter be referred to as the study area within this chapter.

Information informing the Assessment

The assessment has been undertaken using a combination of desk-based studies, site visits and consultations with the design team. The information reviewed as part of the desktop studies includes:

- Land take database and CPO schedule including mapping of Proposed Development overlaid on property parcels. Accommodation works are identified for properties where necessary. Accommodation works are considered as embedded mitigation which has been provided during the iterative design process, and details that will be agreed with landowners.
- Information from the statutory planning policy documents pertaining to the study area (i.e. the County Donegal Development Plan 2024-2030 and the Letterkenny Plan and Local Transport Plan 2023-2029).
- Summary of landowner submissions / meeting outcomes from the non-statutory public consultations.
- Aerial photography.

Key Parameters for Assessment

The following aspects were considered in the assessing the potential effects the Proposed Development may have in relation to non-agricultural land take:

- The extent of land to be temporarily and / or permanently acquired from non-agricultural properties.
- The proportion of land from a particular parcel to be temporarily and / or permanently acquired.

- The extent to which access to the properties may be restricted, relocated, or removed.
- The use of the plots of land affected.
- For residential properties, the extent to which the land take, by itself, would affect the residential use and amenity of the property.
- For commercial properties, the extent to which the land take, by itself, would affect the existing operations of the premises.
- For other properties, the extent to which the continued use of or amenity of the property is impacted, as appropriate.

Where there is no land take from a property, the plot is not included in the land take assessment. It is noted that there are properties within the study area that are located within pockets that land will not be acquired from, but around which there is land take to facilitate the Proposed Development. Any effects on those properties are not arising directly from land take or from demolition. If significant effects arise on those properties, they will be addressed under the relevant topics of the EIAR as appropriate (e.g. noise, air quality, material assets: agriculture).

It is noted for the purpose of the assessment that all zoned lands located within the route corridor include provision to provide land for the Proposed Development (See Chapter 7: Population for information on land use zoning, particularly Section 7.3).

Limitations to the Assessment

With respect to the implementation of the methods included in the TII Standard of 2025, it should be noted that given the advanced stage of the assessments at the timing of the initial publication, with respect to land take, tables that were already prepared for the assessment of impacts on the individual properties were continued to be used. The tables address both construction stage and operational stage impacts from land take as required by TII Standards and land usage is identified, which in the case of this particular study area does include in cases, a mix of uses within single ownership on the same plot of land. The table format also allows the reader to view the extent of both the overall plot and the land take involved.

New mitigation measures are not provided for in this land take impact assessment as given the level of design work and consultation undertaken in advance of the preparation of the EIAR, embedded mitigation by design is provided to address potential impacts arising from land take to each individual property where possible. This embedded mitigation is provided in the land take assessment tables provided in Appendix C16.01 and is considered in the assignment of the magnitude of potential impact and significance of effect. Therefore, there is no change in the significance of effect post-mitigation, and the residual significance of effect only is shown in the tables. In cases, the impact is unavoidable, and mitigation is not applied in those cases as there is no mitigation available to lessen the residual effect.

Individual addresses for residential properties are not provided. Plot numbers had already been assigned for the CPO mapping, and this method of identification has been retained. The properties can be located on the mapping which accompanies the EIAR and addresses are provided within the CPO Schedule.

For commercial properties, the assessment is considered with respect to land use aspects. Considerations included whether a building critical to the operation of the business would be demolished, if access to the premises would be restricted or enhanced, or if an area of parking would be removed such as would significantly compromise the viability of the enterprise being conducted as a result of land take.

Assessment Criteria, Sensitivity and Significance

The TII Standard (2025) provides guidance on sensitivity rating of receptors within Table 4.9. This is provided within this EIAR in Table 7-1 of Chapter 7: Population.

With respect to residential properties, using this guidance, existing housing or zoned residential land within Letterkenny is provided with a high sensitivity rating given the high proportion of growth for the county which this settlement is expected to accommodate up to 2030 in the context of the NPF target. Existing housing or zoned residential land within Ballybofey / Stranorlar and Lifford is provided with a medium sensitivity rating given the moderate proportion of growth for the county which these settlements are expected to accommodate

up to 2030 in the context of the NPF target. Other existing residential properties in or near smaller settlements or in rural areas do not fall within either the medium or low sensitivity rating as per Table 4.9 of the TII Standard (2025), in that they do not cover moderate areas of land relative to other land uses within the zone of influence and are therefore not definitively of medium sensitivity, nor do they comprise of planned residential development that has not been implemented as per the criteria for the low sensitivity rating. While in the context of the Proposed Development such properties are not particularly sensitive, given that the sites contain a residence of members of the receiving population, it has been considered appropriate to take a conservative approach and assign a medium sensitivity to these properties. Sites outside of zoned area which have planning permission for residential uses, or which are in the planning process with a view to obtaining same (i.e. a valid planning application has been made), or whereby a former dwelling is disused, are assigned a low sensitivity rating. There is one exception to this whereby a dwelling that is substantially constructed is considered more sensitive than a site with planning permission only, given the extent of its progression and imminent use.

For businesses and development land and for other land affected by land take, sensitivity is assigned particular to the scale and context of each plot and the nature and extent of the commercial activity carried on there. For example, some lands included in the land take assessment tables are already in use as road carriageway or margin with no other active use and these would be assigned a negligible sensitivity whereas a commercial premises which covers a large area relative to other land uses in the area would be assigned a high sensitivity in line with Table 4.9 of the TII guidance. Commercial zoning is also taken into consideration, but it should be noted that in most cases the pertinent zoning objectives also provide for the implementation of the Proposed Development on the lands.

The TII Standard (2025) also provides guidance on the magnitude of impact within Table 4.10. This is provided within this EIAR in Table 7-2 of Chapter 7: Population. A negligible impact might apply to a very minor alteration to an existing entrance such as regrading of the driveway to align with altered road levels on the public road outside, whereas a high impact rating would apply to the demolition of a house or business premises whereby a resource is permanently lost and there is no capacity to absorb the impact at the existing location.

As with the assessment conducted for Chapter 7: Population, the EPA (2022) method is then used to assign the significance of the effect considering receptor sensitivity and magnitude of impact arrived at from the TII Standard methods. See Table 7-3 of Chapter 7: Population. The significance of effect ranges from negligible to profound.

16.2.2 Utilities

This section will describe the receiving environment and determine the significance of the impact of the Proposed Development on utilities

The criteria for determining the significance of effect is a two-stage process that involves defining the magnitude of the impacts and the sensitivity of the receptors.

The criteria used to assess the potential impacts of the Proposed Development on material assets in the vicinity of the site are outlined in the following tables. The criteria for defining magnitude are summarised in Table 16-1 while the criteria for defining sensitivity are summarised in Table 16-2. These assessments are broadly based on the requirements of the EPA Guidelines (2022).

Table 16-1: Definition of Terms Relating to the Magnitude of an Impact

Magnitude of impact	Definition
High	Loss of resource and/or quality and integrity of resource severe damage to key characteristics, features or elements (Adverse).
	Large scale or major improvement or resource quality extensive restoration or enhancement major improvement of attribute quality (Beneficial).
Medium	Loss of resource but not adversely affecting integrity of resource. partial loss of/damage to key characteristics, features or elements (Adverse).
	Benefit to, or addition of, key characteristics, features or elements, improvement of attribute quality (Beneficial).
Low	Some measurable change in attributes, quality or vulnerability, minor loss or, or alteration to, one (maybe more) key characteristic's, features or elements (Adverse).
	Minor benefit to, or addition of, one (maybe more) key characteristic's, features or elements, some beneficial impact on attribute or a reduced risk of negative impact occurring (Beneficial).
Negligible	Very minor loss or detrimental alteration to one or more characteristic's, features or elements (Adverse).
	Very minor benefit to, or positive addition of one or more characteristics, features or elements (Beneficial).

Table 16-2: Definition of Terms Relating to the Sensitivity of the Utilities

Sensitivity	Definition
High	**High importance, national scale and limited potential for substitution:** ▪ High Pressure (HP) gas pipelines. ▪ Electricity transmission overhead lines (OHL) and underground cables >38 kV. ▪ Pipelines (potable water). ▪ Large scale foul water infrastructure.
Medium	**High or medium importance, regional scale, limited potential for substitution:** ▪ Medium Pressure (MP) and Low Pressure (LP) gas pipelines. ▪ Electricity distribution OHL and underground cables <38 kV. ▪ Distribution pipelines (potable water). ▪ Small scale foul water infrastructure and local collection systems. ▪ Telecommunications infrastructure.
Low	**Low or medium importance, local scale:** ▪ Local connections for water. ▪ Electricity OHL and underground cables – low voltage.
Negligible	**Low importance, local scale:** ▪ Domestic connections for services.

The significance of the effect upon utilities is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The particular method employed for this assessment is presented in Table 16-3. The final assessment for each effect is based upon expert judgement.

Table 16-3: Matrix Used for the Assessment of the Significance of the Effect.

		Magnitude of impact			
Sensitivity of receptor		Negligible	Low	Medium	High
	Negligible	Imperceptible	Imperceptible or slight	Imperceptible or slight	Slight
	Low	Imperceptible or slight	Imperceptible or slight	Slight	Slight or moderate
	Medium	Imperceptible or slight	Slight	Moderate	Moderate or major
	High	Slight	Slight or moderate	Moderate or major	Major or profound

The definitions for significance are defined in the EPA Guidelines (2022), with 'moderate' and 'major' using the EPA definitions of 'significant' and 'very significant' respectively.

16.2.3 Waste

This section will describe the receiving environment and determine the significance of the impact of the Proposed Development on waste.

16.2.3.1 Study Area

The study area for resources and waste generation assessment from the Proposed Development comprises the areas and activities within the Proposed Development boundary, including Construction Compounds and temporary land take, where resources / waste will be used and generated.

Waste from the Proposed Development could be accepted at sites nationally and internationally (that are suitably licensed or permitted for the waste volume and type), for treatment, recovery and disposal. However, as waste management planning in Ireland takes place on a regional basis, the study area generally for waste treatment, recovery and disposal comprises the Connacht Ulster Waste Region (CUWR). The CUWR consists of the following nine local authority regions:

- Cavan County Council;
- Donegal County Council;
- Galway City Council;
- Galway County Council;
- Leitrim County Council;
- Mayo County Council;
- Monaghan County Council;
- Roscommon County Council; and
- Sligo County Council.

Where data is available at a Local Authority or regional level this has been used. National data is used where this is the only available level at which statistics and data is published.

16.2.3.2 Relevant Guidelines, Policy and Legislation

Directive and Legislation

The following directives and legislation were considered when undertaking the waste and resources assessment:

- EU Directive 2011/92/EU as amended by Directive 2014/52/EU on the assessment of the effects of certain public and private projects on the environment ("the EIA Directive");
- Directive 2008/98/EC of the European Parliament and of the Council on waste (Waste Framework Directive), as amended by Directive (EU) 2025/1892 of the European Parliament and of the Council of 10 September 2025;
- European Union (Waste Directive) Regulations 2020 (S.I. No. 323 of 2020) (as amended) (hereafter referred to as the Waste Directive Regulations);
- European Communities (Waste Directive) Regulations 2011, (S.I. No. 126 of 2011) (as amended)
- Council Regulation (EU) 2017/997 of 8th June 2017 amending Annex III to Directive 2008/98/EC of the European Parliament and of the council as regards to hazardous property HP "Ecotoxic" (Re: Hazardous Waste);
- Commission Directive (EU) 2015/1127 of 10 July 2015 amending Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives;
- Commission Regulation (EU) No 1357/2014 of 18 December 2014 replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives;
- Circular Economy and Miscellaneous Provisions Act (2022);
- Regulation (EC) 1013/2006 of the European Parliament and of the Council on Shipments of Waste;
- S.I. No. 86/2008 - Waste Management (Facility Permit and Registration) (Amendment) Regulations 2008, as amended;
- S.I. No. 821/2007 - Waste Management (Facility Permit and Registration) Regulations 2007, as amended;
- S.I. No. 820/2007 - Waste Management (Collection Permit) Regulations 2007, as amended;
- S.I. No. 419/2007 - Waste Management (Shipments of Waste) Regulations 2007, as amended;
- Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (hereafter referred to as the Landfill Directive) as amended; and
- Waste Management Act 1996, as amended (hereafter referred to as the Waste Management Act 1996).

Policy and Guidelines

The methodology used to assess the impacts associated with materials and waste is consistent with, and cognisant of, relevant policy and guideline documents including, but not limited to:

- IEMA (March 2020) Guide to: Materials and Waste in Environmental Impact Assessment;
- A Waste Action Plan for a Circular Economy, Ireland's National Waste Policy (2020-2025);
- A Guide to by-products and submitting a by-product notification under Article 27 of the European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011) (EPA, 2020);
- Waste Management Act 1996 (End-of-Waste) Regulations 2024 (S.I. No. 660 of 2024);
- EPA National End-of-Waste Decision for Reclaimed Asphalt Pavement (RAP) / Bituminous Materials (BDP-N001/2023);
- National By-Product Criteria for Greenfield Soil and Stone (BP-N002/2024);
- EPA National By-Product Criteria for Site-Won Asphalt (BP-N001/2023);
- Best practice guidelines for the preparation of resource & waste management plans for construction and demolition projects (EPA, 2021);
- Construction and Demolition(C&D) Waste (Department of Climate, Energy and the Environment, 2024);
- Construction & Demolition Waste, Soil and Stone Recovery / Disposal Capacity – Update Report 2020 (Regional Waste Management Offices 2020);
- Environmental Protection Agency - Circular Economy Programme 2021-2027 'The Driving Force for Ireland's Move to a Circular Economy' (EPA, 2021);
- Ireland's First Whole-of-Government Circular Economy Strategy 2022 - 2023

- European Commission - A new Circular Economy Action Plan - For a cleaner and more competitive Europe (EC, 2020);
- European Union Pathway to a Healthy Planet for All EU Action Plan: 'Towards Zero Pollution for Air, Water and Soil' and associated waste targets for 2030 (European Commission, 2021)
- Whole of Government Circular Economy Strategy 2022 – 2023: Living More, Using Less (Government of Ireland 2021);
- European Union Construction and Demolition Waste Protocol and Guidelines (European Commission 2018);
- Environmental Protection Agency (EPA) Waste Statistics for Ireland (EPA 2025);
- European Green Deal, 2020;
- Green public procurement - Guidance for the Public Sector (EPA, 2021);
- Guidance on Soil and Stone By-products in the context of Article 27 of the European Communities (Waste Directive) Regulations 2011 (EPA, 2019);
- Guidance on waste acceptance criteria at authorised soil recovery facilities (EPA, 2021);
- Waste Classification – List of Waste and Determining if Waste is Hazardous or non-Hazardous (EPA) (2015a);
- National Waste Statistics Web Resource (EPA, 2021b);
- National Waste Management Plan for a Circular Economy 2024-2030 (RWPO, 2024); and
- National Hazardous Waste Management Plan 2021-2027 (EPA, 2021).

Waste Management Principle

This section details the waste hierarchy principles, in accordance with the Waste Framework Directive, that will be taken cognisance of during the construction phase. The Waste Framework Directive 2008/98/EC, as amended, outlines concepts and principles of waste management options which include waste prevention, preparing for re-use, recycling, recovery, and safe disposal. It also requires that waste be managed without endangering human health and harming the environment - in particular, without risk to water, air, soil, plants or animals, without causing a nuisance through noise or odours, and without adversely affecting the countryside or places of special interest.

The principles that the Waste Framework Directive introduces are: “polluter pays principle”, “extended producer responsibility” and the “waste management hierarchy”. Refer to Figure 16-1.The Waste Framework Directive also requires that Member States adopt waste management plans and waste prevention programmes.

These principles are observed hereinafter. Furthermore, all material requiring disposal shall be handled in accordance with all local regulations and only permitted contractors will be allowed remove specifically consented wastes to licensed or permitted facilities in accordance with legislations referred to below.

Figure 16-1: European Waste Hierarchy

End-of-Waste Materials

If material from the Proposed Development is categorised as waste as opposed to a by-product, Article 28 of the European Communities (Waste Directive) Regulations 2011 (as amended) allows for waste materials to be given End-of-Waste status, following recovery or recycling process, if they meet a set of criteria outlined in the legislation. This means that the material is classified as a product or resource, instead of waste and therefore no longer falls under the jurisdiction of any waste management legislation. The material can therefore re-enter the supply chain.

16.2.3.3 Data collection and Collation

16.2.3.3.1 Desk Study

Relevant information for the waste management assessment was collected through a detailed desktop review of existing data sources, including available EPA, open-sourced indicators (OSI) and Local Authority information. A desk study was undertaken which comprised the following tasks:

- Review of applicable policy and legislation which creates the legal framework for waste and resource management in Ireland;
- Description of the typical waste materials/arising that will be generated during the site-clearance/ demolition, Construction, and Operational Phases;
- Review of the Proposed Development design during development of the EIAR to identify appropriate mitigation and move waste management up the waste hierarchy through implementation of best practice where possible;
- Types, quantities and management of construction and demolition (C&D) waste arisings generated in Ireland and the relevant Local Authority and CUWR jurisdictions were reviewed; and
- Availability (type and capacity) of waste infrastructure within each of the Local Authority jurisdictions through which the Proposed Development will pass and also in the CUWR were obtained.

Estimates of waste generation during the demolition, Construction and Operational Phases of the Proposed Development have been calculated based on the current information.

16.2.3.3.2 Field Survey

As outlined in Chapter 10 (Land, Soils and Hydrogeology) of this EIAR, a detailed ground investigation campaign was undertaken to provide detailed, site-specific information on the local ground conditions, including the potential presence of contaminated ground. The findings of this investigation and the assessment undertaken in Chapter 10 were used to inform the assessment in this chapter.

16.2.3.4 Appraisal method for the Assessment of Impacts - Waste

16.2.3.4.1 General approach

The IEMA Materials and Waste Environmental Impact Assessment Guidance (IEMA, 2020) assessment method focuses on determining the likely significant effects of constructing the Proposed Development on the environment resulting from the consumption of materials and the generation of waste. The IEMA guidance sets out how to assess the significance of environmental effects based on the consideration of the sensitivity of the receptor in combination with the magnitude of the impact. It should be noted that while the IEMA guidance considers landfill void capacity as a key indicator when assessing waste effects, the Proposed Development has been designed to maximise the reuse of site-won materials within the works. As such, excavated soil and stone arising from the Proposed Development are to be reused within the works. Off-site management of material is therefore unlikely; however, if small quantities cannot be reused within the scheme, the volumes involved would be negligible.

16.2.3.4.2 Impact Assessment Criteria

Sensitivity of the Receptor – Materials

The sensitivity of the receptor relates to the availability and type of materials to be consumed by the Proposed Development. The sensitivity of materials can be determined by identifying where one or more of the criteria from the thresholds detailed in are met. Materials can be a receptor as well as a source of effect. The sensitivity criteria for materials are summarised in Table 16-4.

Table 16-4: Sensitivity Criteria for Materials (IEMA, 2020)

Value	Description
Very High	Are known to be insufficient in terms of production, supply and/or stock; and/or comprise no sustainable features and benefits compared to industry-standard materials. *
High	Are forecast (through trend analysis and other information) to suffer from known issues regarding supply and stock; and/or Comprise little or no sustainable features and benefits compared to industry-standard materials. *
Medium	Are forecast (through trend analysis and other information) to suffer from some potential issues regarding supply and stock; and/or Are available comprising some sustainable features and benefits compared to industry-standard materials. *
Low	Are forecast (through trend analysis and other information) to be generally free from known issues regarding supply and stock; and/or Are available comprising a high proportion of sustainable features and benefits compared to industry-standard materials. *
Negligible	Are forecast (through trend analysis and other information) to be free from known issues regarding supply and stock; and/or Are available comprising a very high proportion of sustainable features and benefits compared to industry-standard materials. *

*Subject to supporting evidence, sustainable features and benefits could include, for example, materials or products that: comprise reused, secondary or recycled content (including excavated and other arisings); support the drive to a circular economy; or in some other way reduce lifetime environmental impacts.

Sensitivity of the Receptor – Waste

The sensitivity of waste relates to the availability of regional (and where appropriate national) landfill void capacity in the absence of the Proposed Development. Landfill capacity is seen as unsustainable and increasingly scarce option for managing waste. The sensitivity of landfill void capacity is assessed by applying the following two-step process:

- The volume of waste for disposal that is predicted to be generated within a defined first study area is calculated by analysing the available data and by providing justified forecasts over the Construction Phase of the Proposed Development; and
- The volume of forecast waste for disposal within the defined study area is then compared to the remaining landfill void capacity to identify predicted losses in that capacity over the Construction Phase of the Proposed Development.

The sensitivity of landfill void capacity can be determined through the criteria thresholds detailed in Table 16-5.

Table 16-5: Sensitivity Criteria for Regional Inert, Non-Hazardous and Hazardous Landfill Void Capacity (IEMA, 2020)

Value	Description	
	Inert and Non-Hazardous Landfill	Hazardous Landfill
	Across construction, the baseline / future baseline (i.e. without development) of regional (or where justified, national) inert, non-hazardous, and hazardous landfill void is expected to…	
Very High	Reduce very considerably (by >10%); end during construction or operation; is already known to be unavailable; or would require new capacity or infrastructure to be put in place to meet forecast demand.	Reduce very considerably (by >1%); end during construction or operation; is already known to be unavailable; or would require new capacity or infrastructure to be put in place to meet forecast demand.
High	Reduce considerably: by 6% to 10% as a result of wastes forecast.	Reduce considerably: by 0.5% to 1% as a result of wastes forecast.
Medium	Reduce noticeably: by 1% to 5% as a result of wastes forecast	Reduce noticeably: by 0.1% to 0.5% as a result of wastes forecast.
Low	Reduce minimally: by <1% as a result of wastes forecast.	Reduce minimally: by <0.1% as a result of wastes forecast
Negligible	Remain unchanged, or is expected to increase through a committed change in capacity	Remain unchanged or is expected to increase through a committed change in capacity.

Assessing Magnitude – Materials

The methodology for assessing the magnitude of impact from materials comprises a percentage-based approach that determines the influence of materials consumption on the baseline market capacity (production, stocks or sales), in construction. The approach for assessing the magnitude of impact for materials is detailed in Table 16-6.

Table 16-6: Magnitude Criteria for Inert, Non-Hazardous and Hazardous Landfill Void Capacity (IEMA, 2020)

Value	Description
	The assessment is made by determining whether through a development, the consumption of…
Major	One or more materials is >10% by volume of the regional* baseline availability;
Moderate	One or more materials is between 6% to 10% by volume of the regional* baseline availability;
Minor	One or more materials is between 1% to 5% by volume of the regional* baseline availability
Negligible	No individual material type is equal to or greater than 1% by volume of the regional* baseline availability.
No change	No materials are required.

*** or where justified, national.**

Assessing Magnitude – Waste

The magnitude of impact from waste is assessed by determining the percentage of the remaining landfill void capacity that will be depleted by waste produced during the construction of the Proposed Development. This is the method that best suits the scale and nature of the Proposed Development. The magnitude criteria for assessing the inert, non-hazardous and hazardous landfill capacity void are detailed in Table 16-7.

Table 16-7: Magnitude Criteria for Inert, Non-Hazardous and Hazardous Landfill Void Capacity (IEMA, 2020)

Value	Description	
	Inert and Non-Hazardous Landfill	Hazardous Landfill
	Across construction, the baseline / future baseline (i.e. without development) of regional (or where justified, national) inert, non-hazardous, and hazardous landfill void is expected to…	
Major	Waste generated will reduce national landfill void capacity baseline # by >10%.	Waste generated will reduce national landfill void capacity baseline # by >1%.
Moderate	Waste generated will reduce national landfill void capacity baseline # by 6% to 10%.	Waste generated will reduce national landfill void capacity baseline # by <0.5% to 1%.
Minor	Waste generated will reduce national landfill void capacity baseline # by 1% to 5%.	Waste generated will reduce national landfill void capacity baseline # by <0.1% to 0.5%.
Negligible	Waste generated will reduce national landfill void capacity baseline # by <1%.	Waste generated will reduce national landfill void capacity baseline # by <0.1%.
No change	Zero waste generation and disposal.	Zero waste generation and disposal.

Forecast as the worst-case scenario, during a defined Construction and/or Operational Phase

Significance of impacts

The significance of the effect upon utilities and waste is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The particular method employed for this assessment is presented in Table 16-8. The final assessment for each effect is based upon expert judgement.

Table 16-8: Matrix Used for the Assessment of the Significance of the Effect.

		Magnitude of Impact				
Sensitivity (or Value) of Receptor		No change	Negligible	Minor	Moderate	Major
	Very high	Neutral	Slight	Moderate or large	Large or very large	Very large
	High	Neutral	Slight	Slight or moderate	Moderate or large	Large or very large
	Medium	Neutral	Neutral or slight	Slight	Moderate	Moderate or large
	Low	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate
	Negligible	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight

For an environmental effect to be considered significant for both materials and wastes, it must fall within the 'moderate', 'large' or 'very large' category. For an environmental effect to be considered not significant for both materials and wastes, it must fall within either the 'neutral' or 'slight' category.

16.3 Consultation

Utility providers within the study area were consulted in relation to possible impacts on their services, and these are summarised in Table 16-9. Connaught Ulster Waste Region was consulted in relation to possible impacts on waste and their response is also summarised in Table 16-9.

Meetings and follow up consultations were arranged with stakeholders at all phases of the Project. Comments and queries from stakeholders informed design and are addressed throughout this report. These include agreement on diversion requirements including locations and materials.

Table 16-9: List of Utility and Waste Consultees Contacted

Consultees	Feedback	Comments Addressed
Airtricity- Public Lighting	No Response.	N/A
Aurora	No network in Donegal.	N/A
BT Ireland	BT Ireland telecom service drawings available. BT Ireland's infrastructure exists within Section 2 and 3 and comprises fibreoptics on a shared basis with EXA Infrastructure who are responsible for delivering Project Kelvin.	**Section 16.6**
Connaught Ulster Waste Region	Ensure compliance with the Waste Management Act 1996. Wastes must be recovered or disposed in a lawful manner. A Waste management plan to be prepared to support the Material Assets assessment on waste management.	**Section 16.6**
Donegal County Council (DCC) Sewerage Design	Consultation took place with Uisce Éireann (UÉ)/ DCC in relation to sewerage assets. Interfaces were identified and proposed diversion / protection measures identified and have been included within the proposed works. Impacted sewerage infrastructure will be replaced on a like for like basis.	**Section 16.6**
DCC Water Services (General Comments)	Consultation took place with UÉ/DCC in relation to water supply assets. Interfaces were identified and proposed diversion / protection measures identified and have been included within the proposed works. Impacted water supply infrastructure will be replaced on a like for like basis.	**Section 16.6**
DCC Water Services (Section 1)	**(1)** Lough Mourne is the drinking water source for the Finn Valley from Ballinamore to Ballybofey to Lifford and the Deele Valley from Drumkeen to Raphoe to St. Johnston. The Lough Mourne catchment should be protected. **(2)** Existing pipes from Lough Mourne to water treatment plant in Meencrumlin need to be considered when designing future infrastructure. **(3)** There are plans to impound Lough Mourne and raise its level by 4.5 m to increase storage capacity. This includes upgrading the existing water treatment works at Meencrumlin. **(4)** A strategic pipe link is required between the Lough Mourne Regional Water Supply Scheme (RWSS) and the Letterkenny RWSS. A pipeline corridor needs to be considered within future road corridors. **(5)** Consultation has taken place with DCC Water Services in relation to lands at Dooish, Ballybofey and the proposed design for Section 1, as the site proposed for a section 183 Agreement lies adjacent to the Proposed Development.	**Section 16.6**
DCC Water Services (Section 2)	Consultation has taken place and measures to accommodate any mobilization of network infrastructure have been included within the Proposed Development.	**Section 16.6**
DCC Water Services (Section 3)	Consultation has taken place and measures to accommodate any mobilization of network infrastructure have been included within the Proposed Development.	**Section 16.6**

Consultees	Feedback	Comments Addressed
Eir (Broadband & Telecommunications)	Eir reviewed the preliminary design and provided high level cost estimate for the resolution of conflicts identified across the project.	**Section 16.6**
EirGrid	Consider what approval/consent is required to alter the existing transmission network. All transmission infrastructure needs to be considered in the EIAR, including the construction of any significant towers or diversions.	**Section 16.6**
Enet (Broadband)	Impacted area in N15 Ballybofey/Stranorlar was shown on drawing provided by Enet.	**Section 16.6**
Electric Supply Board (ESB)	**General** ESB confirmed there are no plans for major ESB infrastructure but noted applications for a major load can be submitted at short notice. **Section 1:** Consultation took place during 2018, 2022, 2024 and 2025 with ESB Networks in relation to the proposed 110kV OHL diversion at Cappry, and other interfaces with transmission network throughout Section 1. The proposed 110kV Overhead (OH) diversion at Cappry was developed and incorporated into the proposed works, ensuring all ESB Networks requirements were met. Measures to mitigate conflicts at other interface points were included within the Proposed Development and include replacing existing pole sets with higher pole sets and relocating pole sets. Further consultation took place with ESB Networks in relation to interfaces between the proposed works and the existing low voltage (LV) and Medium Voltage (MV) network. Mitigation measures were identified and accommodated within the proposed design. **Section 2:** Consultation took place during 2018, 2022, 2024 and 2025 with ESB Networks in relation to the proposed Overhead line diversion at Ballyraine and other interfaces with transmission network throughout Section 2. Measures to mitigate conflicts at interface points were included within the Proposed Development and include replacing existing pole sets with higher pole sets and relocating pole sets. Further consultation took place with ESB Networks in relation to interfaces between the proposed works and the existing LV / MV network. Mitigation measures were identified and accommodated within the proposed design. **Section 3:** Consultation took place during 2018, 2022 and 2025 with ESB Networks in relation to interfaces with transmission network throughout Section 3. Measures to mitigate conflicts at interface points were included within the Proposed Development and include replacing existing pole sets with higher pole sets and relocating pole sets. Further consultation took place with ESB Networks in relation to interfaces between the proposed works and the existing LV / MV network. Mitigation measures were identified and accommodated within the proposed design.	**Section 16.6**
EXA Infrastructure – Project Kelvin Fibre Optics	Project Kelvin is the terrestrial portion of EXA Infrastructure (former GTT Hibernia) main transatlantic cable. The fibre optic cable is critical infrastructure that carries data traffic for Global Financial Network (GFN). EXA Infrastructure (EXA-I) have significant infrastructure along the existing N13 and N14 carriageway and Pluck Roundabout is a major junction for their asset. One of the cables feeds from Letterkenny to Derry and another cable provides service from Letterkenny to Strabane. EXA-I have confirmed that there are no assets present in Section 1.	**Section 16.6**

Consultees	Feedback	Comments Addressed
	Consultation with EXA-I in relation to the interfaces with their assets within Sections 2 and 3 design have taken place with feedback provided to enable diversion / protection measures to be designed and cost estimates calculated. EXA-I provided data relating to mapping, duct route and chambers, and safe digging practices for working on the infrastructure. Distribute safe digging documents to all persons involved, especially the appointed contractor on the ground.	
Gas Networks Ireland (GNI)	No recorded Gas Network within area of interest. Ensure a current gas network map is kept on site while work underway.	N/A
Regen Power	Consultations with Regen Power regarding interfaces with power lines for Lettergull windfarm for Sections 2 and 3	**Section 16.6**
Siro	SIRO's network is overlaid on existing ESB network. ESB utility drawings apply. **Section 1**- No fibre network in this region but there are plans for a fibre network in Ballybofey/ Stranorlar. **Section 2**- Information was provided of Siro's existing fibre network in the area. **Section 3**- No fibre network in this area and currently no plans to introduce any.	N/A
Three	Information of H3G Ireland radio site infrastructure was provided. One network node located in Section 2- Reference DO0072 Lurgybrack Letterkenny 110kV – the ESB compound on the N13. Equipment is located on, and adjacent to 20 m monopole structure. Approx. 10m from roadside edge. TM65 / Irish National Grid location: Easting 219,536, Northing 408,508. This does not impact the Proposed Development.	**Section 16.6**
Virgin Media	There are no underground services existing or proposed impacted by the Proposed Development.	N/A
Vodafone	No response	N/A
Uisce Éireann (UÉ)	There will be significant diversion/upgrade works necessary to UÉ assets (pipe network, pump stations etc.) for the three sections. Meetings were held with UÉ and DCC Water Services to discuss proposed plan details. A diversion application and proposed diversion drawings were issued to UÉ. For construction, UÉ will enter into a diversion agreement process where alterations to UÉ assets are required. Key points are summarised below: **(1)** Engagement will continue during the detailed design and construction stages with UÉ to ensure UÉ assets and sources are protected and access is maintained, and to allow provision for futureproofing. Works to, and in the vicinity of, UÉ asset will be completed in accordance with our Standard Details and Codes of Practice. **(2)** The Project will impact on UÉ assets including distribution and trunk watermains, trunk sewers, Lifford service reservoir and the Letterkenny Dunwiley wastewater pumping station in Ballybofey. Key assets include the trunk sewers to Letterkenny Wastewater Treatment Plant (WWTP). **(3)** UÉ encourage the use of SuDS and Green-Blue Infrastructure to manage surface water. New stormwater connections to the public wastewater network will not be permitted.	**Section 16.6**

Consultees	Feedback	Comments Addressed
UÉ (Section 1)	Consultation with UÉ has taken place in relation to interfaces with water mains near River Finn crossing.	**Section 16.6**
UÉ (Section 2)	**(1)** A Trunk Water Main (450 mm dia) and network of water/waste infrastructure within proximity to the Proposed Development, was recently installed. There is also a network of water/waste infrastructure within the proximity of the Proposed Development, including pumps, Listellian Service Reservoir, Riverside Wastewater Pump station and Letterkenny Wastewater Treatment Plant.	**Section 16.6**
UÉ (Section 3)	**(1)** There are a number of UÉ assets e.g. Lurgybrack Reservoir, Listellian within proximity of the Proposed Development. **(2)** There is a network of water/waste infrastructure within proximity of the Proposed Development. **(3)** Magherabeg/Veagh Public Water Supply is 1.5 km Northeast of the route. Crana River intake is 7 km northwest from the route. **(4)** The river network is not proximate to the proposed route, but groundwater is hydrologically connected and of moderate/high vulnerability. Risks to the water supply and potential negative impact on the water quality from surface and ground water quality through the run-off and infiltration of silt, hydrocarbons, cementitious material, detergent, sewage during construction and operational phases need to be mitigated.	**Section 16.6**

16.4 Baseline Environment

16.4.1 Non-Agricultural Properties

The study area for this chapter comprises of lands within the CPO boundary in both rural and urban settings, including lands in the towns of Ballybofey / Stranorlar, Letterkenny and Lifford and the rural areas around and in between these settlements. Non-agricultural properties comprise residential properties, residential uses connected to agricultural holdings, community / amenity facilities and commercial properties. Some disused lands are also located within the Proposed Development footprint and proposed to be subject to CPO. Some of the properties within the CPO boundary are included within the development boundaries for urban settlements and are subject to land use zoning objectives for future development. The relevant zoning objectives, which are identified within the County Donegal Development Plan 2024-2030, and the Letterkenny Plan and Local Transport Plan 2023-2029 make provision for the proposed road scheme and the Proposed Development is in compliance with these objectives. Further details are provided within Section 7.3 of Chapter 7: Population and also, where relevant, within the individual land take assessments provided in Appendix C16.01.

A total of 300 No. Non-Agricultural properties are identified along the route of the Proposed Development from which land will be acquired to facilitate the Project either on a temporary and / or permanent basis. Eight of these properties are subject only to temporary acquisition, while in the case of 173 no. Properties, permanent land take is 0.055ha or less.

These properties are shown in Drawings 16.01, 16.02 and 16.03 for each section respectively within the Book of Drawings that accompanies the EIAR. The property types affected by land take in each section are listed below.

Section 1 (109 No. Properties)

- 73 No. residential properties
- 19 No. residential properties with agricultural use
- 1 No. residential properties with commercial use
- 1 no. residential property with other use
- 2 No. residential properties with agricultural and commercial use
- 2 No. residential properties with agricultural and other use
- 2 No. commercial properties
- 1 No. commercial property with agricultural use
- 1 No. commercial property with agricultural and other use
- 4 No. properties in Other use including agricultural use
- 3 No. properties in Other use, including recreation / amenity use (Cappry Rovers), Uisce Éireann assets, river and adjacent lands and public roads.

For clarity, of the 109 no. properties with non-agricultural land uses whereby land take applies in Section 1, only 16 no. are subject to 100% acquisition. 14 no. Dwelling houses and 1 no. Commercial property are proposed for demolition, with a further 4 no. Dwellings to be acquired but retained.

Section 2 (132 Properties)

- 70 No. residential properties
- 8 No. residential properties with agricultural use
- 1 No. residential property with commercial use

- 5 No. residential properties with other uses11 No. residential property with agricultural and other use
- 14 No. commercial properties
- 4 No. commercial properties with agricultural use
- 4 No. commercial properties with other use
- 1 No. commercial, other and agricultural use
- 3 No. properties with Other use related to residential functions (e.g. access, wastewater treatment plant)
- 3 No. properties in Other use including agricultural use
- 18 No. properties in other use including recreation / amenity (Bonagee United Football Club), community (primary school, public health centre and college), a substation, storage, vacant lands and other uses.

For clarity, of the 132 no. properties with non-agricultural land uses whereby land take applies in Section 2, only 14 no. are subject to 100% acquisition. 8 no. Dwelling houses and 3 no, commercial properties are proposed for demolition, with one further dwelling to be acquired but retained.

Section 3 (59 No. Properties)

- 45 No. residential properties
- 2 No. residential properties with agricultural use
- 2 No. commercial properties
- 9 No. properties in other uses (including a public road).
- 1 No. properties in other uses (including agriculture)

For clarity, of the 59 no. properties with non-agricultural land uses whereby land take applies in Section 3, 14 no. are subject to 100% acquisition. 4 no. Dwelling houses are proposed for demolition in this section, with a further 6 no. Dwellings to be acquired but retained.

Overall Study Area

The property types affected by land take in each section are listed below.

- 188 No. residential properties
- 29 No. residential properties with agricultural use
- 2 No. residential properties with commercial use
- 2 No. residential properties with agricultural and commercial use
- 3 No. residential properties with agricultural and other use
- 6 No. residential properties with other use
- 3 No. properties with Other use related to residential functions (e.g. access, wastewater treatment plant)
- 18 No. commercial properties
- 5 No. commercial properties with agricultural use
- 2 No. commercial properties with agricultural and other use
- 4 No. commercial properties with other use

1 Including one DCC owned plot which contains a dwelling house, but is otherwise predominantly in public road use, and otherwise contains disused buildings and ancillary lands to roads and other functions.

- 8 No. properties in Other use including agricultural use
- 30 No. properties in Other use

The land take assessment tables in Appendix C16.01 indicate the area and proportion of temporary and permanent land take, which in many cases relates to a very small area of land outside the physical boundary of the property whereby road bed and ancillary grassed areas adjacent the public road often form part of the registered ownership of the folio.

For clarity, while land take applies to 300 properties across the overall scheme involving land take from non-agricultural uses, only 44 no. are subject to 100% acquisition. 26 no. Dwelling houses are to be demolished across the overall scheme) of which there is significant overlap with the plots subject to 100% acquisition, and 4 no. landowner plots are affected by demolition of active commercial buildings, noting that one of those plots currently contains 3 no. buildings in multiple units. Eleven dwelling houses are to be acquired but retained across the overall scheme.

16.4.2 Utilities

Utility providers that are known to have services within, or adjacent to, the footprint of the Proposed Development include:

- Electricity Supply Board– ESB Networks and Eirgrid
- Water Services – UÉ and DCC Water and Wastewater Services
- Telecommunications – Eir, E-Net, SIRO, Three Networks Ireland and EXA Infrastructure

There are no gas networks in the study area.

EIAR Drawings in Volume D: Book of Drawings, show approximate locations of known services. These drawings were prepared following liaison and meetings with the various service providers. In some instances, site survey and investigation data has been used to verify these locations.

16.4.3 Waste / Resources

The baseline environment for resource and waste management in Ireland is described in the following sections. Construction waste, including site clearance, demolition and excavation waste, will be mainly generated during the Construction Phase of the Proposed Development. Minor quantities of waste associated with routine maintenance activities will also be generated during the Operational Phase of the Proposed Development.

A desk study was carried out to establish the existing conditions with regards to waste management in the study area and to identify any other areas of waste and/or uncontrolled fill. It was also undertaken to identify the current and likely future conditions in the absence of the Proposed Development for resource materials and waste. Baseline data has been collected at national and regional level, including availability of construction aggregates; construction, demolition and excavation waste arisings; as well as information on regional and national waste transfer and treatment and disposal facilities capacity.

As outlined in Chapter 4: Project Description, the Proposed Development will run above and below current ground level and as a result cutting and filling will be required along the length of the route. Whilst there will be a significant volume of excavated material generated by the works within the Proposed Development boundary, all the material excavated will be reused, re-purposed, repositioned within the boundary. There will be small quantities of municipal-type waste generated during construction and operation. Therefore, the waste management baseline of construction and municipal waste was established for both the Construction and Operational Phases.

The Proposed Development forms part of the TEN-T network in Donegal, which comprises strategic EU transport corridors incorporating sections of the N13, N14, and N15 national primary roads.

- The N13 links Letterkenny with Derry to the north and Sligo–Galway–Limerick to the south, connecting with the N14, N56, and N15.
- The N14 connects Letterkenny to Lifford and onward via the Lifford Bridge to Strabane in County Tyrone, Northern Ireland, forming a key cross-border route between Donegal and Dublin.
- The N15 runs from Sligo to Donegal Town and northwards through Ballybofey/Stranorlar to Lifford, linking with the N14, although the section between Stranorlar and Lifford is not part of the TEN-T network.

Based on the baseline data sources, GI surveys, and walkover surveys, it is determined that there is no indication of the existence of historical or currently active landfill sites. There is no evidence of contaminated land along the Proposed Development. Refer to Chapter 10: Land, Soils, and Hydrogeology of this EIAR. The potential wastes to be generated by the Proposed Development are given in Table 16-10 and their potential for significant environmental impacts are discussed below in the next section 16.5.1.3.

Table 16-10: Key Streams of Materials Arising during Construction and Demolition

Description	EWC Code (Commission of the European Communities, 2010)	Onsite Management	Offsite Management
Liquid fuels	13 07 01-03*	Segregated storage container	Management at a dedicated facility
Mixed dry recyclables	15 01 06	Segregated bin	Recycling
End-of-life tyres (Construction vehicle tyres)	16 01 03	Segregated storage container	Recycling
In-situ concrete from foundations, sub-structures, columns, deck slab, footpaths etc	17 01 01	Stockpiling separately	Recycling, disposal
Mixture of concrete, bricks, tiles, and ceramics (from demolition of buildings)	17 01 06*	Stockpiling separately	Recycling, disposal
Wood from construction	17 02 01	Segregated skip - reuse on-site where possible	Reuse or energy recovery
Glass (from demolition)	17 02 02	Segregated storage container	Recycling, disposal
Plastic from construction	17 02 03	Segregated skip	Return to supplier, recycling, disposal
Iron and steel from construction	17 04 05	Segregated skip	Recycling, disposal
Insulations from construction, other than asbestos	17 06 04	Segregated skip	Recycling, disposal
Insulation materials and asbestos-containing construction materials	17 06 05*	Segregated storage container	Management at an asbestos containing material management facility
Other construction and demolition wastes (including mixed wastes) containing hazardous substances	17 09 03*	Segregated storage container	Management at a dedicated facility

Description	EWC Code (Commission of the European Communities, 2010)	Onsite Management	Offsite Management
Spill kits, plant nappies and absorbent mats	15 02 02*	Segregated storage container	Management at a dedicated facility
Food, biodegradable kitchen, and canteen waste	20 01 08	Segregated bin	Recycling
Chemicals (solvents, pesticides, paints, adhesives, detergents etc.)	20 01 13* 20 01 19* 20 01 27* 20 01 28 20 01 30	Segregated storage container	Management at a dedicated facility
Batteries and accumulators	20 01 33* 20 01 34	Segregated storage container	Management at a dedicated facility
Electrical and electronic components	20 01 35* 20 01 36	Segregated storage container	Management at a dedicated facility
Biodegradable waste (cleared vegetation)	20 02 01	Stockpiling separately	Composting
Straw bale check dams for sediment control	02 01 06	Stockpiling separately	Uncontaminated: Reuse as mulch onsite. Composting offsite. Contaminated: Management at a dedicated facility
Rock filter for sediment control	20 02 02	Stockpiling separately	Recovery
Silt barriers / fences	20 01 11	Segregated bin	Recycling, Recovery
Separation geotextile for working platforms	20 01 11	Segregated bin	Recycling, Recovery
General mixed waste including commercial waste and municipal waste	20 03 01	Segregated bin	Recovery, disposal
Waste engine, gear and lubricating oils	13 02	Segregated bin	Recycling, Recovery
Contaminated sediment from Wheelwash and attenuation ponds	17 05 05*	Stockpiling separately	Management at a dedicated facility

16.4.3.1 Waste Generation Phases

Fencing and some site clearance works, including tree, hedgerow and vegetation clearance and building demolition will be completed outside the breeding bird season (1st March to 31st August, inclusive) unless it is confirmed that no breeding birds are present within 5 m of the proposed vegetation removal by the Ecological Clerk of Works (ECoW) immediately prior to the vegetation being removed. Refer to mitigation measures set out in Chapter 9A Biodiversity Terrestrial and Chapter 9B Biodiversity Aquatic of this EIAR for full details.

Construction Phase

Construction activities will include site clearance within the lands required for the Proposed Development. Vegetation removal will be undertaken in a controlled manner outside of the breeding bird season of 1st March to 31st August, or as described above and detailed further in Chapter 9A Biodiversity Terrestrial and Chapter 9B Biodiversity Aquatic of this EIAR. Where feasible, vegetation, soils and seedbanks identified by the ecology and landscape specialists will be retained for reuse in landscaping and reinstatement works.

Excavated materials, including topsoil and subsoil, will be managed and temporarily stored on site prior to reuse within the works. Stockpiles will be located away from watercourses, drains and sensitive receptors and constructed to minimise erosion and run-off, in accordance with relevant best practice guidance, including the Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (IFI, 2016). Topsoil and subsoil will be stored separately and managed to maintain their quality and suitability for reuse.

Demolition works will be required for the purpose of the Proposed Development, and this include demolition of residential and commercial properties, as well as existing road infrastructure at tie-in locations.

Excavated soil and stone and other suitable construction and demolition (C&D) materials will be reused on site, thereby minimising waste generation and reducing the need for off-site management.

Only minor quantities of waste, such as packaging materials, municipal-type waste from construction staff, and small quantities of unsuitable material, may require off-site recovery or disposal at appropriately authorised facilities.

Operational phase

During the Operational Phase, minor quantities of waste may arise from routine road maintenance activities. These may include materials from pavement maintenance, drainage maintenance, litter collected from the carriageway and verges, and vegetation or landscaping management (e.g. grass cutting, hedge trimming and invasive species management). Such wastes will be managed in accordance with the relevant waste legislation and local authority maintenance procedures.

16.4.3.2 Material Assets: Resource Use

In 2018, the Irish Concrete Foundation published the *'Essential Aggregates: Providing for Ireland's needs to 2040'* report in response to Government's Project Ireland 2040 to highlight the strategic importance of aggregates. The report details that Ireland has abundant natural reserves of high-quality aggregates (stone, sand and gravel). Aggregates are also the basic raw materials for concrete products which are ubiquitous in Ireland's built environment. The Irish quarrying industry comprises approximately 500 active large commercial quarries. These quarries produce aggregates from crushed rock, sand and gravel and which are used as key building materials.

Table 16-11 provides a summary of quantities of total aggregates production in Ireland between 2018 to 2022. There are approximately 220 ready-mixed concrete plants, and 20 large scale precast concrete plants located throughout Ireland. In addition, there are 40 plants producing bitumen bound road surfacing materials for Ireland's national road network. Total aggregates in 2022 were 37,000,000 tonnes which is a decline from 38,000,000 tonnes in 2021.

Table 16-11: Total Aggregates Production in Ireland 2018-2022 (ICF Annual Reports, 2019-2022)

Year	2018	2019	2020	2021	2022
			Tonnes		
Aggregates	36,000,000	38,000,000	36,000,000	38,000,000	37,000,000

Quantities of ready-mixed concrete in Ireland between 2018 – 2022 are provided in Table 16-12. Ready mixed concrete declined in 2019 from 5,000,000m^3 to 4,700,000m^3 in 2022. Total ready mixed concrete was estimated at 4,700,000m^3 from 2020 to 2022.

Table 16-12: Total Ready Mixed Concrete in Ireland 2018-2022 (ICF Annual Reports, 2019- 2022)

Year	2018	2019	2020	2021	2022
			m^3		
Ready mixed concrete	4,900,000	5,000,000	4,750,000	4,750,000	4,700,000

The Proposed Development will source materials for construction, and it is best practice to use local suppliers and to reuse materials on site. This minimises the attendant environmental impact and cost of waste transport and supports the economic well-being of the local communities in line with the proximity principle.

Both secondary and recycled aggregates can be used as alternatives to primary aggregate and have a number of benefits, including the reuse of secondary and waste materials, thereby reducing the impact of primary extraction. Secondary aggregates are typically by-products of industrial processes. These can be sub-divided into manufactured and natural aggregates, depending on their source and can include materials such as pulverised fuel ash, ground granulated blast furnace slag, incinerator bottom ash and recycled glass. Recycled aggregates are typically derived from reprocessing inert materials previously used in construction (e.g. road planning or crushed concrete).

16.4.3.3 Suitable Licenced Waste Facilities

Table 16-13, for completeness, details the licenced waste facilities in the Connacht-Ulster Waste Region (CUWR) that may be considered were there to be any requirement for the disposal of material and waste streams generated by the Proposed Development. However, as explained further below, it is very unlikely that there will be any need for disposal of material to these facilities, other than small quantities of municipal wastes from compounds, wastage and/or damaged materials, C&D wastes not otherwise recovered. There are 159 licensed waste facilities identified within CUWR. These include integrated waste management, soil recovery, waste to energy, hazardous storage and landfill facilities. Detailed information on each of these facilities can be found on the EPA and the National Waste Collection Permit Office (NWCPO) websites. Facilities located in Mayo, Galway and Monaghan County have been excluded from Table 16-13 due to the travel distance to these facilities.

Table 16-13: Facilities Operating Under Waste Licence in Connaught-Ulster Waste Management Region

Facility	License Number	Annual Intake (tonnes)	Closure date	Waste /Material Authorized	Distance
		Co. Donegal			
Hugh Barr	WFP-DL-17-020-04	50,000	2027	All	71.4 km
Hubert McLaughlin & Sons Ltd.,	WFP-DL-19-015-04	50,000	2027	All	59.2 km
Daniel Lynch	WFP-DL-19-043-03	10,000	2026	End-of-life Tyre, Iron & Steel, used batteries	62.1 km
Charlie McLaughlin	WFP-DL-21-080-03	Unknown	2026	End-of-life 165,747 ton/yr Iron & Steel - 4,000 ton/yr	49.4 km

Facility	License Number	Annual Intake (tonnes)	Closure date	Waste /Material Authorized	Distance
Michael Donaghey	WFP-DL-21-135-01	Unknown	2027	Soil & Stone, Bitumen, Concrete Total 200,000	22.7 km
Sidney McDaid	WFP-DL-20-006-04	50,000	2026	C&D wastes, Mixed dry recyclables, End-of-life tyres, Recyclable municipal waste	23.4 km
Moyle Plant Ltd	WFP-DL-19-042-03	50,000	2026	Soil & Stone	65.3 km
Dorrian Construction Ltd.	WFP-DL-21-136-01	50,000	2026	Soil & Stone	24.1 km
ND Ford Breakers Ltd	WFP-DL-21-125-02	Unknown	2027	End-of-life Tyre, Iron & Steel, used batteries	63.4 km
BIGbin Waste Tech Ltd.	COR-DL-21-074-01	Unknown	2027	Biodegradable wastes	52.4 km
Carty Contractors Ltd.	WFP-DL-21-133-01	Unknown	2027	soil & Stone Total 200,000	53.4 km
Connor Doherty	WFP-DL-21-137-01	1,000	2027	End-of-life Tyre, Iron & Steel	27.9 km
Green Vehicle Recycling Ltd	WFP-DL-20-061-04	1,000	2027	End-of-life Tyre, Iron & Steel	22.2 km
Danny Kearney	COR-DL-21-073-01	Unknown	2027	soil & Stone Total 25,000	64.4 km
Raymond McDaid	WFP-DL-21-008-05	Unknown	2027	End-of-life Tyre, Iron & Steel	31.4 km
Martin O'Donnell	WFP-DL-21-069-04	Unknown	2028	End-of-life Tyre, WEET	49.2 km
Bryson Recycling Ltd.	COR-DL-21-031-03	Unknown	2028	End-of-life Tyre, Recyclable	38.6 km
Bryson Recycling Ltd.	COR-DL-21-032-03	1000	2028	Hazardous waste non-liquid 25 tonnes, liquid waste 25,000 litres, 1000 kg used batteries	4.2 km
Shaun Molloy	WFP-DL-21-009-05	50,000	2027	Wood, Bitumen, Concrete, mixed packaging, End-of-life, Iron & Steel, Biodegradable, hazardous 20	49.3 km
BIGbin Waste Tech Ltd.	COR-DL-22-075-01	900	2027	Recyclable municipal waste	49.1 km
Donegal Recovery Services Ltd.	WFP-DL-22-084-04	Unknown	2027	End-of-life tyres, C&D wastes, municipal waste recyclable	3.2 km
Sharkey Waste Recycling Ltd.,	WFP-DL-18-028-04 (T)	50,000	2027	Soil & Stone, mixed packaging, end-of-life tyre, C&D wastes, Recyclable municipal waste	67.2 km

Facility	License Number	Annual Intake (tonnes)	Closure date	Waste /Material Authorized	Distance
Hugh Barr	COR-DL-23-079-01	Unknown	2029	Soil & Stone Total 25,000	71.1 km
Adrian McElhinney	WFP-DL-20-134-01	7,500	2028	End-of-life tyres	23.2 km
Patrick Logan & Sons Ltd	WFP-DL-24-114-04	50,000	2029	Mixed packaging, end-of-life tyre, C&D wastes, Recyclable municipal waste	38.5 km
Bryson Recycling Ltd (Carndonagh)	COR-DL-24-046-03	1,000	2029	Liquid fuels, end-of-life tyre, C&D wastes, Recyclable municipal waste	80.5 km
Bryson Recycling Ltd (Dungloe)	COR-DL-24-047-03	1,000	2029	Liquid fuels, end-of-life tyre, C&D wastes, Recyclable municipal waste	48.9 km
Bryson Recycling Ltd (Laghey)	COR-DL-24-048-03	1,000	2029	Liquid fuels, end-of-life tyre, C&D wastes, Recyclable municipal waste	28.1 km
Dan Mullarkey	WFP-DL-23-139-01	Unknown	2029	Soil & Stone Total 25,000	24.4 km
Ian Lamberton	WFP-DL-23-130-02	Unknown	2029	Soil & Stone Total 200,000	55.1 km
Joseph Woods	WFP-DL-21-138-01	Unknown	2029	Liquid fuels, end-of-life tyre,	74.9 km
Sharkey Waste Recycling Ltd	WFP-DL-24-029-04	50,000	2029	All non-hazardous	58.2 km
Shaun Molloy & Sons Ltd	WFP-DL-24-132-02	50,000	2029	All non-hazardous	27.4 km
Pauric Meehan	WFP-DL-20-027-04	7,500	2030	Wood, Mixed C&D, Iron & Steel	52.2 km
Shaun Molloy & Sons Ltd	WFP-DL-25-140-01	50,000	2030	Concrete and Mixed C&D	26 km
Jordan Car Breakers Ltd	WFP-DL-24-122-03	1,000	2030	End-of-life tyres	34.1 km
		County Leitrim			
Bruscar Bhearna Teoranta.	W0216-01	4000	Unknown	Mixed C&D	131 km
Darren Reilly	WFP-LM-16-001-02	no file	2026	Liquid fuels, End-of-life, Iron & Steel	128 km
ACE 4x4 Spares Ltd.	WFP-LM-10-001-05	unknown	2027	Liquid fuels, End-of-life, Iron & Steel	132 km
		County Sligo			
Norris Plant Hire Limited	COR-SO-21-001-01	5,000	Unknown	Soil & Stone	93 km
Harrington Concrete (Sligo) Unlimited Company	WFP-SO-19-001-02	22,000	Unknown	Soil & Stone, Bitumen, Mixed C&D	96.4 km

Facility	License Number	Annual Intake (tonnes)	Closure date	Waste /Material Authorized	Distance
Atlantic Metals Ltd	WFP-SO-24-001-01	7,500	2029	End-of-life, Iron & Steel	92 km
BIGbin Waste Tech Ltd	COR-SO-24-001-01	10	2029	Biodegradable mixed	140 km
Starrus Eco Holdings Limited	W0058-01	9,000	Unknown	Mixed C&D	87 km
County Cavan					
Kieran King	COR-CN-21-0001-01	3,720	2026	Soil & Stone	118 km
Laurence Keenan	COR-CN-21-0002-01	4,000	2026	Soil & Stone	142 km
Wilton Waste Recycling Ltd.	WFP-CN-22-0001-01	50,000	2028	Wood, Mixed C&D	119 km
Cullivan Civils Limited	WFP-CN-22-0005-01	24,500	2027	Wood, Mixed C&D	130 km
Joe Brady Contractors Limited	COR-CN-23-0002-01	10,000	2028	Soil & Stone	130 km
Andrew Fay	WFP-CN-24-0001-01	25,000	2029	Soil & Stone	147 km
Lakeland Dairies Co-operative Society Limited	WFP-CN-24-0002-01	Unknown	2027	Soil & Stone, Concrete 9,295	124 km
Brian Cobey Plant & Quarries	WFP-CN-25-0001-01	22,000	2030	Soil & Stone	142 km
Alan & Louise Foster	WFP-CN-25-0003-01	22,000	2030	Soil & Stone	133 km
Polyfab Plastics Limited	WFP-CN-25-0002-01	2,950	2030	Mixed packaging, 17 02 03	131 km
Daniel Fay	WFP-CN-23-0001-01(1)	12,500	2027	Soil & Stone	136 km
Wilton Waste Recycling Ltd	WFP-CN-20-0001-02	49,750	2030	Soil & Stone, Wood, Concrete, Mixed C&D, End-of-life, Iron & Steel, Biodegradable waste	155 km
Cavan County Council	W0077-04 (IED)	5,000	Unknown	Mixed C&D	136 km
Cavan Waste Disposal Limited	W0207-01	7,000	Unknown	Mixed C&D	140 km
County Roscommon					
McKeons Sand & Gravel Limited	WFP-RN-17-0001-02	40,000	2026	Soil & Stone, Concrete	223 km
McKeons Sand and Gravel Limited	WFP-RN-21-0001-01	50,000	2026	Soil & Stone, Concrete, Bitumen, Mixed C&D	224 km
Hanly Quarries Limited	WFP-RN-22-0001-01	40,000	2027	Soil & Stone, Concrete	152 km

Facility	License Number	Annual Intake (tonnes)	Closure date	Waste /Material Authorized	Distance
Port Douglas Contractors Ltd	COR-RN-23-0001-01	1,631	2028	Soil & Stone, Concrete	156 km
BIGbin Waste Tech Ltd.	COR-RN-23-0003-01	1,000	2028	Biodegradable mixed	170 km
Roscwood Recycling Ltd	WFP-RN-23-0004-01	50,000	2028	Wood	174 km
Castlerea ELV Recycling Ltd	WFP-RN-18-0002-02	1,000	2028	Liquid fuels - 50 End-of-life tyres - 100 Iron & Steel - 300	153 km
Roscommon County Council	W0059-03	20,000	Unknown	Mixed C&D	137 km
Roscommon County Council	W0073-01	1,000	Unknown	Mixed C&D	171 km
Bruscar Bhearna Teoranta	W0163-01	1,100	Unknown	Mixed C&D	171 km

16.4.3.4 Construction and Demolition Waste

The Waste Framework Directive requires that the majority of non-hazardous C&D waste (minimum of 70%, excluding natural soils and stone) shall be prepared for reuse, recycled or subjected to other material recovery, including backfilling operations using waste to substitute other materials by 2020.

In 2022, the latest year for which there are published statistics available, 8.3 million tonnes of C&D waste was generated, a decrease of 9% from 2021 (EPA 2024a). Of this waste, 6.7 million tonnes comprised soil and stones, making up 82% of the material waste stream. A breakdown of the composition of C&D waste in Ireland in 2022 is set out in Table 16-14. These figures should be considered as a guide only as C&D waste can vary significantly from one project to another, depending on the nature of the development and the waste management practices employed on-site.

Table 16-14: Quantity of C&D Waste Collected by Authorised Waste Collectors in 2022 (EPA 2024a)

Waste Materials from C&D Sources	Quantity (tonnes)	Proportion of Material Stream (%)
Soil and stone	6,741,489	82
Mixed C&D waste	544,415	7
Concrete, brick, tiles and similar	616,687	7
Metals	206,851	3
Bituminous mixtures	104,270	1.0
Segregated wood, glass, and plastic	54,101	>1
Total	8,267,813	

The Proposed Development lies entirely within the CUWR (Connacht-Ulster Waste Region) and is governed by the requirements of the National Waste Management Plan for a Circular Economy. The National Waste Management Plan for Circular Economy 2024 -2030 has been published and replaces the Regional Waste Management Plans. The single national waste plan directs waste policy across all three regions; however, the

three regional management structures remain in place. The plan sets policies to promote prevention and management of waste in Ireland. The plan also sets targets, methods and key drivers of sustainable consumption practices to reduce waste generation. This does not alter the operational licensing framework for waste facilities but establishes national policy targets and priorities for waste prevention, reuse and recovery. The EU Waste Framework Directives (2008/98/EC), as amended by Directive (2025/1892/EU), require Member States to take the necessary measures to achieve the minimum recycling/ recovery target of 70% by weight for non-hazardous C&D waste, excluding naturally occurring materials, by 2020. The EPA reported an 85% material recovery of non-hazardous C&D waste, excluding naturally occurring materials in Ireland in 2021.

Details on facilities in the Connacht Ulster Waste Region which manage C&D are presented previously in Table 16-13, listed by county.

The C&D waste and excavated material generated by the Proposed Development, will be primarily inert and non-hazardous waste. As disclosed in the National Waste Management Plan for Circular Economy Volume I, Ireland had available 32,865,310 tonnes treatment capacity for soil waste in 2021 (NWMPCE, 2024).

The EPA reports that final treatment of C&D waste in 2022 took place in Ireland (94%) and only 6% was exported abroad for final treatment. Most C&D waste treated in Ireland was recovered by backfilling (81%), while 7% went for disposal and only 10% was recycled (EPA 2024a). Under the Waste Framework Directive, EU Member States must achieve 70% of material recovery of non-hazardous and non-soil-and-stone C&D waste by 2020.

A summary of the permitted waste facilities for the CUWR, active at the time of preparation of this assessment, is provided in Table 16-13. Many permit holders are authorised to accept more than one waste type. Table 16-15 below summarises by waste type, the total number of Waste Facility Permit Sites and the total capacity within the CUWR for each waste type. EIAR Drawing 16.20 in Volume D: Book of Drawings of this EIAR shows the locations of permitted construction waste facilities in Donegal. Facilities located in Mayo, Galway and Monaghan County have been excluded from the baseline due to the travel distance to these facilities.

The Proposed Development has been designed to re-use 100% of the non-hazardous earthworks materials generated by the construction of the Proposed Development within the CPO boundary of the works, i.e. excavated soil and stone and other suitable materials generated during construction will be reused on site. If a situation arises where surplus C&D material must be removed off-site, it will be undertaken in accordance with Article 27 by-product regulations and guidance to support circular resource management wherever possible. Temporary storage of excavated soils on site will be undertaken in accordance with relevant soil management guidance to maintain material quality and suitability for reuse. As such, off-site recovery or disposal of materials is not anticipated, or would be negligible should small quantities arise.

Table 16-15: Summary of CUWR Waste Facility Permit Data - NWCPO Local Authority Waste Facility Register (2025)

Waste Type	Number of Waste Facility Permit Sites in CUWR	Capacity of Waste Facility Permit Sites in the CUWR (tonnes)
Soil and stones	30	746,920
Wood	11	361,250
Concrete	18	564,045
Mixed C&D	17	476,350
Bituminous Mixtures	12	372,000
Other Construction Waste	26	261,550
Total	**114**	**2,782,115**

16.4.3.5 Hazardous Waste

The EPA reported 389,908 tonnes of hazardous waste was generated in Ireland in 2022, a decrease of 16% (over 77,000 tonnes) from 2021 (EPA, 2024b). The construction sector contributed 15% to hazardous waste generated in 2022 from sources including contaminated dredge spoil and smaller amounts of asbestos, asphalt, contaminated wood, concrete, bricks, metals, and tiles. Typically, these wastes are treated on-site or off-site at hazardous waste treatment facilities in Ireland or exported to facilities in other countries.

Approximately 169,000 tonnes of hazardous waste was treated in Ireland in 2022. 26,447 tonnes of hazardous waste was treated on site of generation, and 142,961 tonnes was treated off-site at Irish hazardous waste management facilities. The remainder was exported for treatment (EPA, 2024b).

Table 16-16 sets out the minimum number and capacity of waste facilities for each type of hazardous stream.

Table 16-16: Summary of CUWR Waste Facility Permit Data - NWCPO Local Authority Waste Facility Register (2025)

Waste Type	Number of Waste Facility Permit Sites in CUWR	Capacity of Waste Facility Permit Sites in the CUWR (tonnes)
Liquid Fuels	2	50
End-of-life tyres	29	641,097
Batteries and WEET wastes	6	111,750
Total	**37**	**752,897**

16.4.3.6 Municipal Waste

Municipal waste will be generated in small quantities during the Construction and Operational Phases (i.e. associated with maintenance activities) of the Proposed Development. Municipal waste in Ireland is made up of household waste as well as commercial and other waste that, because of its nature or composition, is similar to household waste. According to the EPA, Ireland generated 3.17 million tonnes of municipal waste and recycled 41% of this in 2021 (EPA 2024e).

Of the 3.17 million tonnes of municipal waste generated in Ireland in 2021, 41% was recycled, 42% was used in energy recovery, 16% was landfilled, 11% was sent for organic treatment and 1% of waste was estimated to be unmanaged. Approximately 1.3 million tonnes of Ireland's municipal waste went for incineration with energy recovery in 2021. Of the 3.17 million tonnes of municipal waste, 43% is estimated to be non-household municipal waste. Since 2001, significant changes have occurred in the management of municipal waste in Ireland, notably the dramatic decline in landfilling over this period accompanied by increased levels of recycling in the early 2000s and subsequently an increase in the share of municipal waste sent for energy recovery since 2011 (EPA 2024e).

In September 2020, the DCCAE published a new national waste strategy, the Waste Action Plan for a Circular Economy (DCCAE 2020). The following targets were noted in the National Waste Action Plan for municipal waste in Ireland which will be implemented using waste collection permit conditions:

- Municipal solid waste (MSW) recycling rate of 55%, 60%, and 65% by 2025, 2030 and 2035 respectively; and
- Limit the amount of MSW to landfill to 10% by 2035.

To achieve these targets from the 41% recycling rate in 2021 improvements are required in waste reduction, segregation and contamination rates. The EPA estimates that (Government of Ireland 2019, 'A Waste Action Plan for a Circular Economy - Ireland's National Waste Policy 2020-2025'):

'*…that Ireland's municipal recycling (including organic waste for composting and anaerobic digestion through the organic bin) rate could increase by 50% (from 40%) if all recyclable (including organic) material was removed from the general waste bins and placed into the correct mixed dry recycling and organic waste bins.*'

Biodegradable municipal waste (BMW) comprises those elements of the municipal waste stream that will degrade biologically, for example food waste, garden and parks waste, wastepaper and cardboard.

Under the Landfill Directive, Ireland is committed to meeting targets for the diversion of BMW from disposal to landfill including a target of less than 427,000 tonnes, refer to National Waste Management Plan 2024 – 2030. There has been a steep decline in Ireland's landfill rate for municipal waste from over 80% in 2001. Ireland must reduce the share of municipal waste landfilled to 10% or less by 2035, which includes waste landfilled at each step along the waste treatment process in Ireland and abroad (EPA 2024e).

The Proposed Development will generate a small amount of municipal waste from the construction compounds. Table 16-17 sets out the minimum number and capacity of waste facilities for each type of waste.

Table 16-17: Summary of CUWR Waste Facility Permit Data - NWCPO Local Authority Waste Facility Register (2025)

Waste Type	Number of Waste Facility Permit Sites in CUWR	Capacity of Waste Facility Permit Sites in the CUWR (tonnes)
Mixed dry recyclable	10	402,700
Biodegradable wastes	22	192,960
Total	**32**	**595,660**

16.5 Predicted Impacts

This section discusses the characteristics of the Proposed Development likely to result in significant effects on the environment. The section is divided into both construction phase impacts and operational and maintenance phase impacts for all three sections.

In the absence of the Proposed Development, the baseline trends or may be subject to future works or land use changes subject to planning permission.

16.5.1 Construction Phase Impacts

16.5.1.1 Non-Agricultural Properties (Construction and Operational Phase Impacts)

As most of the land to be acquired for the Proposed Development from non-agricultural properties is permanent acquisition, most impacts arising from land take and demolition on non-agricultural properties will commence in the construction period and will continue into the operational phase. Hence the impacts and effects are assessed jointly in Appendix C16.01.

There are a small number of properties where land will be required temporarily. There are also some properties where in addition to permanent acquisitions lands will also be required on a temporary basis. In this scenario, impacts regarding temporary land-take will be during construction only and generally small in extent and is assessed within Appendix C16.01. While non-agricultural property may be affected by noise, dust, construction traffic and associated impacts on visual and residential amenities during the construction stage, these impacts are considered within Chapter 6: Traffic & Transportation, Chapter 7: Population, Chapter 12: Air Quality, Chapter 14: Noise & Vibration, and Chapter 18: Landscape & Visual. There may be impacts during the construction phase associated with interruptions to access to a property (for example where a driveway might be resurfaced to align with new road levels) or temporary loss of use of a premises while works are underway which are considered within the land take assessments provided in Appendix

C16.01. Temporary land take effects whereby land is used to facilitate temporary works will be made good post-construction stage (see Section 4.11.2.3 of Chapter 4 Project Description).

Impacts specifically associated with land take that remain at operational stage may include the requirement for a boundary to be reconstructed in a new location with potential reduction in property size, revised access arrangements, loss of parking or storage areas, or reduction in garden size, all of which can affect the usage of the property in question. In certain cases, where entire properties are proposed to be subject to acquisition the potential impact is therefore the removal of the use of the property.

The design team has endeavoured to avoid and minimise land take from private properties such as residential and commercial properties where possible. However, given the nature, location and extent of the Proposed Development, acquisition, including some acquisition of entire properties is unavoidable.

In many cases it should be noted that where slight / not significant impacts are identified, these will diminish following an adjustment period as the slightly altered property circumstances will become established, and residents will adjust. This may also be the case for moderate impacts in some circumstances.

Where lands are in multiple uses that include agricultural use, impacts are considered in the context of the effects on the non-agricultural element of the use with consideration of effects on the agricultural land use addressed in that section of the EIAR (Chapter 15: Material Assets (Agriculture)).

Description of Likely Significant Effects

The area of land required for the Proposed Development is not likely to have a significant effect when considered at a national or regional level. The land take from private properties arising from the Proposed Development is not considered to have a significant effect at county level within Donegal. However, from a local or individual perspective, land take is likely to result in significant impacts. This is particularly the case for existing residential property owners and commercial operations.

The temporary and permanent effects of land take associated with the Proposed Development on non-agricultural properties are described on an individual property basis, with embedded mitigation in place. It is also noted that compensation will also be provided where land take and any associated demolition arise. The magnitude of impact and residual effect is considered with respect to the permanent effect, unless temporary acquisition only is required.

The non-agricultural land take assessment summary results are outlined in Table 16-18. The basis for these impact assessment results, and the extent of properties affected is detailed in Appendix C16.01. Residential folios relate to properties that contain a dwelling house. Other folios such as Residential with agricultural or commercial or other use or more than one of these additional uses include a dwelling. The agricultural function of relevant folios is addressed in Chapter 15: Material Assets (Agriculture). Other non-agricultural folios refer to any other properties including *inter alia* commercial properties, amenity lands, public lands and disused lands or a mix of uses where there is not a dwelling house on the plot. Some of these also have agricultural uses which are addressed in Chapter 15: Material Assets (Agriculture).

Of the non-agricultural properties affected by land take, 44 no. are subject to a significant adverse effect or greater; this predominantly relates to demolition and / or full plot acquisition, including the demolition of 26 no. dwelling houses and 4 no. commercial premises, and the acquisition and retention of a further 11 no. dwelling houses. However, the majority of properties subject to land take will not experience a significant adverse effect. 166 no. of the 300 no. properties are predicted to experience a residual effect of not significant or less. The foregoing is broken down by each of the three sections of the Proposed Development within Table 16-19 to Table 16-21.

Table 16-18: Land Take Impact Assessment Results (Overall Proposed Development)

	Permanent Proposed Development Boundary– Construction and Operational Phase Impacts	
Significance of Effect	No. of Folios with Residential Uses	No. of other Non-Agri folios
Imperceptible	6	12
Imperceptible-Not Significant	111	12
Not Significant	18	7
Not Significant-Slight	6	2
Slight	32	12
Slight - Moderate	9	6
Moderate	10	9
Moderate-Significant	2	2
Significant or Very Significant	0	4
Profound	36	4
Total	229	71

Section 1

In Section 1, two parcels relate to temporary land take only. There are a number of parcels where permanent land take is very small in area and impacts land such as road bed in the ownership of the property without affecting the physical boundary. Of the 109 non-agricultural properties affected by land take, 66 no. have a residual effect rate Not Significant or less. Of the non-agricultural properties affected by land take in Section 1, 19 no. are subject to a significant or greater adverse effect, all of which are rated as a Profound effect as there is considerable overlap with properties whereby the entirety of the holding is proposed to be acquired for the purposes of the Proposed Development. 14 no. dwelling houses and buildings on 1 no. commercial properties are to be demolished to accommodate Section 1. Four further dwelling houses are to be acquired but retained. A pump house which is an Uisce Éireann asset is to be acquired but retained.

Table 16-19: Land Take Impact Assessment Results (Section 1)

	Permanent Proposed Development Boundary Construction and Operational Phase Impacts	
Significance of Effect	No. of Folios with Residential Uses	No. of other Non-Agri folios
Imperceptible	3	-
Imperceptible-Not Significant	55	3
Not Significant	2	3
Not Significant-Slight	4	-
Slight	10	4
Slight - Moderate	4	-
Moderate	2	-
Significant or Very Significant	-	-
Profound	18	1
Total	98	11

Section 2

In Section 2, two parcels relate to temporary land take only. However, there are also a significant number of landholdings where only a very small area of land registered to the owner is to be acquired; in cases this relates to road bed only with the physical boundary unaffected.

Of the non-agricultural properties affected by land take in Section 2, 14 no. are subject to a significant or greater residual adverse effect, of which there is some overlap with those plots whereby 100% of the plot is to be acquired or a demolition is proposed or other significant effect. The greatest extent of commercial demolition occurs in Section 2, whereby 3 no. landowners are affected. 8 no. dwelling houses are to be demolished within Section 2. One further dwelling house is to be acquired but retained.

Table 16-20: Land Take Impact Assessment Results (Section 2)

	Permanent Proposed Development Boundary Construction and Operation Phase Impacts	
Significance of Effects	**No. of Folios with Residential Uses**	**No. of other Non-Agri folios**
Imperceptible	3	11
Imperceptible- Not Significant	30	6
Not Significant-Slight	2	1
Not Significant	16	4
Slight	12	6
Slight-Moderate	5	6
Moderate	7	5
Moderate-Significant	2	2
Significant	0	4
Very Significant	-	-
Profound	8	2
Total	84	48

Section 3

No properties are identified with temporary land take only along the proposed route of Section 3. However as with other sections, there are numerous properties where land take is a negligible area of land both in terms of size and in terms of the current use whereby land currently in road bed is being acquired and the physical property boundary is not impacted. 30 no. of the properties to be subject to land take are assigned a residual rating of an adverse effect of less than Not Significant. Of the properties affected by land take in Section 3, only 11 no. are subject to a significant adverse effect or greater; these are assigned a Profound effect noting substantial overlap with properties where all of the plot is to be acquired for the purposes of the Proposed Development. 4 no. dwelling houses are to be demolished and a further 6 no. are to be acquired but retained. No commercial demolitions are proposed in Section 3.

Table 16-21: Land Take Impact Assessment Results (Section 3)

	Permanent Proposed Development Boundary Construction and Operational Phase Impacts	
Significance of Effect	No. of Folios with Residential Uses	No. of other Non-Agri folios
Imperceptible	-	1
Imperceptible-Not Significant	26	3
Not Significant-Slight	-	1
Slight	10	2
Slight- Moderate	-	-
Moderate	1	4
Profound	10	1
Total	47	**12**

Residential Properties (including those with other uses) – Overview

All residential receptors are rated medium or high with respect to sensitivity in accordance with the TII Standard (2025) other than where a structure formerly, but not currently in use as a dwelling is rated as being of low sensitivity.

Typically, land take of residential properties within the Proposed Development boundary footprint is **Imperceptible-Not Significant** where land take is required but does not encroach on the property boundary or the physical curtilage. This has arisen when part of the land ownership folio includes areas that are currently in road carriageway, footpath, setback or verge usage and there is no encroachment on a dwelling house, boundary wall, private garden space or other features ancillary to the enjoyment of the property. There are some not significant or slight effects when minor encroachment on the property boundary arises. This may be from temporary works to regrade an existing access to tie into new public road levels at the property, or a small area of boundary is affected for example and needs to be replaced.

Slight, Slight-Moderate or Moderate effects to residential receptors generally arise where there is a more substantive change to access to the property and / or impacts to boundaries with some loss of garden / amenity / circulation area, where there might be a loss of private wastewater facilities or a proportionally substantial percentage of acquisition. In such cases, there is discernible change to the amenities or circumstances of the property, but the viability is not compromised. In most cases impact is mitigated as much as possible by means of the provision of a new boundary treatment, or alternative wastewater treatment or access arrangements.

Profound effects arise where an entire plot is to be acquired, or a dwelling house is demolished to facilitate the implementation of the Proposed Development or services essential to the operation of a dwelling house are to be acquired. In most other cases, existing residential use will not be able to continue should the Proposed Development be approved and implemented. 26 no. dwelling houses are to be demolished because of the Proposed Development and a further eleven will be lost to the current owners as a resource.

Other Non-Agricultural Properties - Overview

In the case of commercial and other uses, the sensitivity ratings include low sensitivity properties based on the application of the TII Standard (2025). For example, disused plots or low intensity use on a small scale relative to the study area. In cases this influences the significance of the effect as the resource subject to the impact is not rated as sensitive as residential properties or more intensively used plots or larger scale operations.

Typically, land take of commercial properties or properties in other use within the Proposed Development boundary footprint is **Imperceptible-Not Significant** where land take is required but does not encroach on the property boundary or the physical curtilage including where some folios include (or comprise predominantly in this case) areas that are currently in road carriageway, footpath, setback or verge usage and there is no encroachment on a building, boundary wall or fence, parking area or yard space or other feature ancillary to the functionality of the property. **Not Significant** or **Slight** effects typically arise where areas of commercial space or amenity lands are to be acquired but:

- Do not have any significant impact on the operations or enjoyment of the premises (typically low intensity use or in circulation space or parking use for which sufficient room remains or in the case of an amenity area, no impact on existing walkways or key features).
- There are minor boundary impacts, but a new boundary treatment will be provided.
- Minor changes to access are required but suitable access is maintained for the continuation of the existing use.

Slight-Moderate, Moderate, Significant, Very Significant effects relate to more substantive land take, boundary interventions and alterations to space in use, or changes to access. Generally, changes to the access, internal layout and boundaries can be accommodated without affecting the viability of the business or the community facility or amenity. In some cases, there is an element of demolition but not of the entire resources on the plot. Also, in some cases there is full acquisition, but the low sensitivity of the usage does not warrant a profound effect notwithstanding a high magnitude of impact, thus lessening the effect. In many cases, after a period of temporary adjustments, perception of impacts may lessen in severity.

Profound effects arise in most cases where all or most of the commercial buildings on a site will be acquired and demolished to facilitate the implementation of the Proposed Development. Only 4 no. plots of land will be impacted by the demolition of a commercial building arising from the Proposed Development.

16.5.1.2 Utilities

This section outlines the locations where impacts to existing services have been identified

Electric Supply

Section 1

The Section 1 study area hosts two 110 kV transmission lines, one on either side of N15 along with one 110kV electricity substation west of the Drumkeen area proximal to the study area. A 38 kV distribution line transects the study area boundary in a south-west to north-east direction overlapping with Ballybofey/ Stranorlar and the N15 in several places. This line continues to the Convoy area where it also connects to Letterkenny, within the Section 2 study area. The Ballybofey area hosts the 38 kV substation associated with this 38 kV line.

The Proposed Development crosses the northern 110 kV line four times as it runs in close proximity to the line for a distance of approximately 2.8 km. The route does not impact the substation in Ballybofey. It does impact local electricity supplies.

Refer to Section 16.6 for details of the conflicts and proposed resolution.

Section 2

The Section 2 study area contains a 110kV substation with 110kV transmission and 38 kV distribution OH electricity cables. The Letterkenny 110kV substation is located south of Lurgybrack in the townland of Listellian. Two 38 kV lines run through Lurgybrack and transect the study area boundary in several places. A 110kV transmission line transects the N56/N13 in south-north direction close to the Polestar Roundabout. The Proposed Development does not impact existing substations, but it will have impacts on local electricity supplies.

Refer to Section 16.6 for details of the conflicts and proposed resolution.

Section 3

The Proposed Development results in a number of conflicts with electricity supply, including high voltage OH transmission lines of 110kV, distribution lines of 38 kV and lower voltages.

Refer to Section 16.6 for details of the conflicts and proposed resolution.

Renewable Energy

The County Donegal Development Plan 2024 – 2030 aims to facilitate the development of a diverse energy portfolio by the sustainable harnessing of renewable energy sources.

Section 1

The Proposed Development is located several kilometres away from the nearest windfarm. It is not located near coastal areas and does not cross any existing oil or gas lines. Therefore, Section 1 is not expected to impact on renewable energy.

Section 2

The Proposed Development is located several kilometres away from the nearest windfarm, is not located close to coastal areas, and does not cross any existing oil or gas lines.

The Proposed Development intersects with the future Lettergull Wind Farm grid connection route 38 kV line (Planning Reference No. 20/51961) at two locations at Listellian close to the Letterkenny 110 kV substation. It is expected that construction of the grid connection will be complete in 2026. It is a planning condition of the wind farm grid connection power line that it is undergrounded beneath the proposed mainline where it crosses the Proposed Development. Consultation has taken place with Lettergull Wind Farm representatives and design levels for the Proposed Development have been provided to Lettergull Wind Farm representatives to allow for the undergrounding of the power line so as not to conflict with the Proposed Development works to ensure both can be constructed in accordance with their respective approvals. A drawing is also included of potential ESB conflicts which highlights the Lettergull connection route crossing of the Proposed Development. The Lettergull Wind Farm is sited several kilometres from the Proposed Development and therefore Section 2 is not expected to impact on renewable energy.

Section 3

A planning application was submitted to DCC for Lettergull wind farm of 30-year operational life at Momeen, off the R236 approximately 3 km north of the existing N14. The OH power line (Planning Application No. 2051961) for the wind farm was accepted at the end of 2020, enabling for the construction of the wind farm.

The Proposed Development route intersects with the Lettergull Wind Farm grid connection route 38kV line (Planning Reference No. 20/51961) at the N14 crossing at Ballyholey. It is expected that construction of the grid connection will be complete in 2026. It is a planning condition of the wind farm grid connection power line that it is undergrounded beneath the proposed N14 mainline where it crosses the Proposed Development. Consultation has taken place with Lettergull Wind Farm representatives and design levels for the Proposed Development have been provided to Lettergull Wind Farm representatives to allow for the undergrounding of the power line so as not to conflict with the Proposed Development works and ensure both can be constructed in accordance with their respective approvals. The Lettergull Wind Farm itself is sited several kilometres from the Proposed Development and therefore Section 3 is not expected to impact on renewable energy.

Telecommunications

Eircom owns a Digital Subscriber Line (DSL) exchange within Ballybofey and services the area's phone and broadband networks. Progress had been achieved through national and EU co-funded projects in addressing the broadband core network and international connectivity deficits, through the implementation of the Metropolitan Area Networks (MAN) Schemes in towns such as Ballybofey/ Stranorlar. The Proposed

Development does not impact the Eircom DSL exchange or the MAN, although it will impact local communication lines at road crossings.

E-Net is located across the Ballybofey/ Stranorlar and Letterkenny regions of the Proposed Development. Various fibre optic cables are running in ducts along existing roads as part of the MAN. There is no E-Net infrastructure is present in Section 3.

EIR assets are located across Ballybofey/ Stranorlar, Letterkenny, and Lifford/ Strabane regions of the Proposed Development. A number of OH and underground services are affected by the Proposed Development. The infrastructure includes ducting, chambers and test poles.

Project Kelvin, constructed in 2009, is the terrestrial portion of a transatlantic fibre optic cable. Project Kelvin was a joint €30 million initiative between Department of Communications and Natural Resources (DCNR) for Ireland and the Department of Enterprise, Trade & Investment (DETI) for Northern Ireland and is partly funded through the EC INTERREG IVA programme. The cable originates in North America and lands in Portrush Beach Manhole terminating in Dublin via Coleraine, Derry, Letterkenny, Strabane, Omagh, Ballymena, Belfast, Portadown, Armagh, Monaghan, Castleblayney and Drogheda. This cable is considered critical infrastructure. This fibre optic cable carries data traffic for the GFN used by High Frequency Traders which currently unites hundreds of global banks and financial exchanges with a single connection. Section 2 and 3 has direct conflict with existing Project Kelvin infrastructure.

Refer to Section 16.6 for details of the conflicts and proposed resolution. !

Water and Wastewater Supply

Section 1

The study area is located in the Finn/ Derg/ Foyle Water Management Unit (WMU) Action Plan area. Lough Mourne is the public water supply source for Ballybofey/ Stranorlar and its environs. Lough Mourne is located approximately 7.6 km south of Ballybofey town, immediately east of the N15. The N15 is located adjacent to the Burn Daurnett, a tributary of the River Finn.

The Proposed Development conflicts with a number of UE assets across Section 1. Diversions or protection measures will be adopted with mutual agreement with UE and Water Services Department of Donegal County Council.

Refer to Section 16.6 for details of the conflicts and proposed resolution.

Section 2

There are three public water supply sources for Letterkenny and its environs – Lough Greenan, Lough Salt and Lough Keel. The Goldrum Water treatment plant treats water sourced from Lough Keel and makes up almost 50% of the total water supply. Lough Keel is located approximately 15.3 km north of Letterkenny town, immediately east of the N56.

The Proposed Development conflicts with a number of UE assets across Section 2. Diversions or protection measures will be adopted with mutual agreement with UE and Water Services Department of Donegal County Council.

Refer to Section 16.6 for details of the conflicts and proposed resolution.

Section 3

The study area is located in the Finn/ Derg/ Foyle WMU Action Plan area. Public water supply in the area is from the Lough Mourne Water Resource Zone (WRZ). The Argery reservoir and the Lifford Town reservoir serves the areas of Lifford, Ballindrait and Rossgier. There are also water schemes in Drumoghill and Mannorcunnham.

The Proposed Development conflicts with a number of UE assets across Section 3. Diversions or protection measures will be adopted with mutual agreement with UE and Water Services Department of Donegal County Council.

Refer to Section 16.6 for details of the conflicts and proposed resolution.

Wastewater Treatment Plants

Section 1

The primary WWTP located with the study area is Ballybofey/ Stranorlar WWTP (D0120). The 2023 Annual Environmental Report (AER) stated the WWTP was non-compliant with the *Ammonia-Total (as N)* emission limit values (ELVs) set in the wastewater discharge license.

The Proposed Development is located approximately 1.7 km northwest of the WWTP site and will not impact the WWTP.

Section 2

The primary WWTP located with the study area is Letterkenny WWTP (D0009). The 2023 AER stated the WWTP was non-compliant with the Ammonia-Total (as N) emission limit values (ELVs) set in the wastewater discharge license.

The Proposed Development is located approximately 300 m southwest of the WWTP site and will not impact the WWTP.

Section 3

There is one wastewater treatment plant within the Section 3 study area, which is located in Lifford. The plant currently operates on primary treatment only. This treatment plant is not directly affected by any of the options corridors.

There are also wastewater treatment plants outside the study area boundary in Raphoe, Convoy and Manorcunningham, none of which will be impacted by the Proposed Development.

Conclusion On Potential Impacts on Utilities

The potential for any impact or disruption to utility services during the construction phase of the Proposed Development is predicted to be of local spatial extent, brief (less than a day) to temporary (less than one year) in duration, and of high reversibility.

It is predicted that any potential impact or disruption would affect the utility service involved directly and not result in a loss of resource. The magnitude is therefore, considered to be negligible.

Along the route of the Proposed Development, there will be an interaction with a number of utilities, including: a number of OHL including 110kV transmission cables, Project Kelvin (a fibre optic cable connecting Ireland to North America that is considered critical infrastructure) and a number of public water supply pipelines. These assets are considered to have a high sensitivity. The remaining utility assets are deemed to be of medium sensitivity.

Overall, the magnitude of the impact is deemed to be negligible and the sensitivity of utility assets in the area of the Proposed Development is considered to be medium / high. The effect will, therefore, be of **slight significance**.

16.5.1.3 Waste and Resources

This waste and resources assessment included identifying the types of waste that could be generated by the Proposed Development, as well as the potential for reuse of materials. Since the approach for this project is a circular economy approach in line with TII and government guidance, the primary intent is to reuse resources on-site and avoid wastes generation where possible.

The Proposed Development has been designed to maximise the reuse of site-won materials within the works. Excavated soil and stone and other suitable construction and demolition (C&D) materials will be reused, repurposed, repositioned within the boundary of the Proposed Development.

This assessment was informed by a desk-based study including identification of the types of waste that could be generated by the Proposed Development, a review of existing and proposed waste management facilities as well as the potential reuse of materials.

Additionally, sustainable waste and resource management principles have been incorporated into the design of the Proposed Development, and these principles will also be applied in line with the Waste Hierarchy Model throughout the Construction and Operational Phases. This will ensure that waste generation will be minimised.

General construction and demolition waste streams arising from the Proposed Development are described in Section 16.4.3 (Table 16-10). These wastes include, but not limited to, wood, packaging, metals, plastics, bricks, blocks, canteen waste, and hazardous wastes (e.g. oils, paints, and adhesives).
Conservative estimates of the waste materials and volumes likely to be generated and the potential for significant environmental impacts are outlined below. Conservative estimates provided are robust, and it is not expected that actual arisings will exceed these figures.

16.5.1.3.1 Excavated Material

The development of the vertical alignment for each Section has sought to achieve an optimum earthworks balance to minimise the need to import or export material. The vertical alignment was developed, using an iterative process, taking cognisance of various constraints including watercourses, flood levels, side road crossings (minimum clearances for overbridges, underbridges), underpasses, etc. The development included adjusting the vertical profile where possible to provide for the optimum earthworks balance while also taking account of landtake and minimising the environmental impacts. Vertical alignment geometry standards also constrained the vertical alignment. The earthworks along the Proposed Development have been assessed to provide the most efficient use of the in-situ material taking into account the requirement to provide as best as is practical a balance of earthworks material between cut and fill, and to fulfil environmental and planning requirements. Given the nature of the Proposed Development and the construction methodologies outlined in Chapter 4: Project Description of this EIAR**,** the uncontaminated naturally occurring material generated on-site will be re-used within the works and therefore this material is not defined as a waste. Material Extraction and Deposition (MED) Areas have been identified within the Proposed Development boundary to provide a source for suitable excavated material for use in the works as well as for the deposition of material for re-use (e.g. backfilling excavations, landscaping, etc.). The locations of MED areas were assessed based on locations adjacent to the proposed road, suitable material for road construction and environmental constraints. The MED areas provide a sustainable solution to obtain suitable material for road fill and also areas to deposit material not suitable for road construction. The provision of MED areas removes the need to import acceptable material for embankment construction and also the need to export unsuitable material off site. Compliant excavated material that is not surplus to requirements will be re-used in the works for engineering purposes including fill to embankments, landscaping, placed as non-structural fill in shallow slopes or used in backfilling operations at MED areas. Non-compliant material may be processed by mechanical, chemical or other means to render the material compliant for use in the works. Non-compliant material will also be used to backfill MED areas.

Section 1

For Section 1, while there is a significant amount of excavated material generated by the works within the Proposed Development, all the material excavated will be reused, repurposed, repositioned within the Proposed Development. The construction of the Proposed Development will require approximately 2.05 million m^3 of fill material. It is anticipated that approximately 2.7 million m^3 of excavated material will be generated, 2.06 million m^3 of which will be available for re-use as engineering fill for embankments with another approximately 645,000 m^3 to be re-used within the works, either in designated MED areas or as other non-structural engineering fill within the Proposed Development.

There are a total of fifteen MED areas located within the Section 1 CPO boundary and the locations of these MED areas are in close proximity to the permanent works in areas with the least environmental/ ecological impact. The proposed MED areas are intended to provide sufficient capacity to cater for any surplus material that may arise. Refer to the General Arrangement Drawings EIAR Drawing 4.1 (Sheets 1 to 8) in Volume D for locations of the MED areas.

Section 2

For Section 2, while there is a significant amount of excavated material generated by the works within the Proposed Development, all the material excavated will be reused, repurposed, repositioned within the Proposed Development. The construction of the Proposed Development will require approximately 1.53 million m^3 of fill material. It is anticipated that approximately 1.91 million m^3 of excavated material will be generated, 1.53 million m^3 of which will be available for re-use as engineering fill with another approximately 384,000 m^3 to be re-used within the works, either in designated MED areas or as other non-structural engineering fill within the Proposed Development.

There are a total of twenty-one MED areas located within the Section 2 CPO boundary and the locations of these MED areas are in close proximity to the permanent works in areas with the least environmental/ ecological impact. The proposed MED areas are intended to provide sufficient capacity to cater for any surplus material that may arise. Refer to the General Arrangement Drawings EIAR Drawing 4.2 (Sheets 1 to 5) in Volume D for locations of the MED areas.

Section 3

For Section 3, while there is a significant amount of excavated material generated by the works within the Proposed Development, all the material excavated will be reused, repurposed, repositioned within the Proposed Development. The construction of the Proposed Development will require approximately 3.42 million m^3 of fill material. It is anticipated that approximately 3.35 million m^3 of excavated material will be generated, 2.83 million m^3 of which will be available for re-use as engineering fill with another approximately 515,450 m^3 to be re-used within the works, either in designated MED areas or as other non-structural engineering fill within the Proposed Development. There is a deficit between the volume of excavated material and fill material. This deficit will be met from material extraction.

There are a total of nine MED areas located within the Section 3 CPO boundary and the locations of these MED areas are in close proximity to the permanent works in areas with the least environmental/ ecological impact. The proposed MED areas are intended to provide sufficient capacity to cater for any surplus material that may arise. Refer to the General Arrangement Drawings EIAR Drawing 4.3 (Sheets 1 to 10) in Volume D for locations of the MED areas.

Considering that all excavated materials generated during construction phase will be reused within the works, therefore no impact on regional waste treatment or disposal capacity is anticipated and the effect is considered to be neutral.

16.5.1.3.2 Demolished Structures

It is estimated that a total of 47 residential and commercial properties, 20 No. structures in Section 1, 17 No. structures in Section 2 and 11 No. structures in Section 3, will be demolished to allow for the construction of the Proposed Development. It is estimated that approximately 1,400 m^3 of waste materials will be generated from the demolition of the identified properties as shown in Table 16-22.

Table 16-22: Estimated Mass of Demolished Material from Structures

Section	Approx. Chainage	Location Description	Structure Description	Area of Structure (m^2)	Mass of Demolished Material (t)	Retain or recycle
Section 1						
No. 1	0+980 m	Mainline 1.2	Commercial shed	1280	1550	Directly impacted
No. 2	1+130 m	Mainline 1.2	Single storey bungalow and outbuildings	200	60	Directly impacted
No. 3	1+030 m	Mainline 1.2	Single storey bungalow and outbuildings	265	80	Directly impacted
No. 4	0+050 m	L-2794 (Cappry Road) tie-in	Outbuilding	95	140	Directly impacted
No. 5	0+690 m	Ballybofey Link Road	Single storey bungalow and outbuildings	200	60	Directly impacted
No. 6	1+760 m	Mainline 1.2	Single storey bungalow and outbuildings	230	70	Directly impacted
No. 7	1+750 m	Mainline 1.2	Single storey bungalow and outbuildings	205	65	Directly impacted
No. 8	1+840 m	Mainline 1.2	Single storey bungalow and outbuildings	180	55	Directly impacted
No. 9	1+950 m	Ballybofey Link Road	Single storey bungalow and outbuildings	170	50	Directly impacted
No. 10	2+320 m	Mainline 1.2	Single storey bungalow and outbuildings	170	50	Directly impacted
No. 11	2+300 m	Mainline 1.2	Two storey dormer and outbuildings	-	-	Retain the existing structure - it can be sold/used after the construction
No. 12	3+870 m & 3+760 m	Mainline1.2	Single storey bungalow, outbuildings and shed	270	80	Directly impacted
No. 13	3+850 m	Mainline 1.2	Detached two storey house and outbuildings	205	65	Directly impacted
No. 14	4+050 m	Mainline 1.2	Single storey bungalow, outbuildings	-	-	Retain the existing structure - it can be sold/used after the construction
No. 15	5+130 m	Mainline 1.2	Dwelling and outbuildings	330	100	Directly impacted
No. 16	6+900 m	Mainline 1.2	Dwelling, outbuildings and shed	340	105	Directly impacted
No. 17	6+700m	Mainline 1.2	Single storey bungalow and outbuildings	95	30	Directly impacted
No. 18	0+650 m	N15 Primary Road Connector	Two storey dormer and outbuildings	-	-	Retain the existing structure - it can be sold/used after the construction
No. 19	0+150m	L-6674 Connector	Single storey bungalow and outbuildings	-	-	Retain the existing structure - it can be

Section	Approx. Chainage	Location Description	Structure Description	Area of Structure (m^2)	Mass of Demolished Material (t)	Retain or recycle
						sold/used after the construction
No. 20	0+100m	Mainline 1.2	Outbuildings	260	390	Directly impacted
No. 21	0+050m	AR1.07	Outbuildings	110	165	Directly impacted
No. 22	4+820m	Mainline 1.2	Pump House (Uisce Éireann Asset)	-	-	Retain the existing structure
No. 23	4+350m	Mainline	Dwelling	115	35	Demolish
No. 24	0+640m	L-6564 Connector	Outbuildings	20	6	Demolish
No. 25	3+760 m	Mainline	Outbuildings	250	75	Demolish
Section 2						
No. 1	0+090 m	Mainline 2.1	Single storey bungalow and outbuildings	180	55	Directly impacted
No. 2	0+200 m	Mainline 2.1	Detached two storey house and outbuildings	140	45	Directly impacted
No. 3	2+325 m	Dromore Junction	Two storey dormer and outbuildings	190	60	Directly impacted
No. 4	2+325 m	Dromore Junction	Two storey dormer and outbuildings	150	45	Directly impacted
No. 5	2+325 m	Dromore Junction	Single storey bungalow and outbuildings	235	70	Directly impacted
No. 6	1+220 m	L-5494 Connector	Single storey bungalow and outbuildings	100	30	Directly impacted
No. 7	1+420 m	L-5494 Connector	Single storey bungalow and outbuildings	145	45	Directly impacted
No. 8	0+100 m	Dry Arch roundabout	Dwelling and outbuildings	180	55	Directly impacted
No. 9	0+150	Mainline 2.6	Detached two storey house and outbuildings	155	-	Retain the existing structure
No. 10	0+100 m	Bonagee Junction LX-2010	Commercial Building	1735	2600	Directly impacted
No. 11	0+050 m	Dry Arch roundabout	Outbuilding	185	275	Directly impacted
No. 12	1+000 m	Mainline 2.4	Commercial shed	3285	4925	Directly impacted
No. 13	0+150 m	Ballyraine Junction	Commercial Building	1665	2495	Directly impacted
No. 14	1+450 m	L-5494 Connector	Outbuildings	100	150	Directly impacted
No. 15	0+050 m	Listellian Junction	Disused outbuilding	70	20	Directly impacted
No. 16	0+970 m	Mainline 2.2	Outbuildings	75	110	Directly impacted
No. 17	2+090m	Mainline 2.2	Outbuildings	120	180	Directly impacted

Section	Approx. Chainage	Location Description	Structure Description	Area of Structure (m^2)	Mass of Demolished Material (t)	Retain or recycle
Section 3						
No. 1	0+300	L1294 Manorcunningham Local Road (Ch 0+150 m)	outbuildings	110	32	Directly impacted
No. 2	2+120 m	Drumoghill	Dwelling and outbuildings	-	-	Retain the existing structure
No. 3	2+500 m	Drumoghill	Single story bungalow, two bed max. (approx. 100+ years old)	67	20	Recycling the walls 0.7t
No. 4	7+700 m	Adjacent to Access Road AR3.32	Dwelling and outbuildings	-	-	Retain the existing structure
No. 5	9+150 m	LX3014 Tullyrap (Ch 0+040 m)	Disused house	41	12	Directly impacted
No. 6	9+370 m	Mainline	Disused house	60	18	Directly impacted
No. 7	9+380 m	Mainline	Disused house	60	18	Directly impacted
No.8	13+400 m	Ballindrait Side Road (Ch 0+030 m)	Small open shed	8	2	Directly impacted
No. 9	13+700 m	Ballindrait Side Road (Ch 0+250 m)	Semi-detached one and a half with extension, four bed max. (approx. 140 years old)	40	12	Recycling the walls 0.7 t
No. 10	13+700	Ballindrait Side Road (Ch 0+250 m)	Semi-detached one and a half, disused building	40	12	Recycling of the Concrete Slabs 1.2t
No. 11	14+100 m	Ballindrait Side Road (Ch 0+840 m)	Disused dwelling, outbuildings / sheds	500	150	Recycle walls and concrete
No. 12	14+100 m	Ballindrait Side Road (Ch 0+850 m)	outbuildings / sheds	735	220	Recycle walls and concrete
No. 13	14+100 m	Ballindrait Side Road (Ch 1+000 m)	Single Story Bungalow, four bed max. (recently refurbished but approx. 60+ years old)	155	50	Recycling of the Concrete Slabs 1.2t
No. 14	14+100 m	Ballindrait Side Road (Ch 1+200 m)	Dwelling and outbuildings	-	-	Retain the existing structure
No. 15	14+600 m	R264 Murlog	Single Story Bungalow, four bed max. (80+ years old)	175	-	Retain the existing structure - it can be sold/used after the construction
No. 16	17+300 m	Access to the pond / adjacent to realigned N15 Lifford Tie In West	Two Story Detached House, four to six beds max. (15 years old)	190	-	Retain the existing structure - it can be sold/used after the construction

Section	Approx. Chainage	Location Description	Structure Description	Area of Structure (m^2)	Mass of Demolished Material (t)	Retain or recycle
No. 17	17+300 m	Access to the pond / adjacent to realigned N15 Lifford Tie In West	Two Story Detached House, Four to six beds max. (20 years old)	180	-	Retain the existing structure - it can be sold/used after the construction

Note: For Residential structures, mass of demolished material considered is 0.3t per m^2 and for commercial structures, it is considered as 1.5t per m^2.

The overall estimated mass of demolished material from structures is approximately 14,987 tonnes. The waste which will account for the vast majority of demolition waste will be classified as either inert or non-hazardous wastes, including concrete, masonry, wood and steel. It is envisaged that the demolition materials, particularly concrete and stone, will be suitable for reuse on site as fill materials or other construction material. Appropriate testing and certification will be undertaken to demonstrate if the material requires further treatment to achieve End-of-Waste status under Article 28. Any testing, certification and validation required to demonstrate compliance with EPA guidance and the relevant regulatory criteria will be undertaken prior to reuse of these materials within the works.

Demolition works will also include the removal of small sections of existing road infrastructure at tie-in locations. This will involve the removal of existing pavement layers. Materials arising from this activity will be processed on site (e.g. crushing) and reused within the Proposed Development as engineering fill, subject to compliance with the relevant regulatory criteria.

Considering that all materials generated from demolition works will be reused within the works, therefore the potential impact is considered to be low, and the effect is considered to be neutral.

16.5.1.3.3 Pile Arisings

Soil arisings will be generated from pile bores to be used for bridge structures. The majority of the excavated material will be soils, but the pile arising will also contain sands, gravels and cementitious materials. It is expected that bored pile arisings will total approximately 5,400 m^3 to include for the piles at both the Swilly, Finn and Deele River crossings.

The pile arisings may contain cementitious materials and therefore require careful control on-site to contain the arisings and ensure they cannot wash-off or otherwise enter watercourses or other sensitive areas. The pile arisings will be re-used within the works, subject to appropriate testing and classification to confirm their suitability for reuse and compliance with the relevant waste management legislation and regulatory requirements. Given the relatively small volume of pile arisings and the controlled nature of piling operations, the potential impact associated with their management is considered to be low with a neutral significance.

16.5.1.3.4 Surplus Materials and Wastage

As stated previously in Section 16.4.3.4, the Proposed Development has been designed to re-use 100% of the non-hazardous earthworks materials generated by the construction of the Proposed Development within the CPO boundary of the works, i.e. excavated soil and stone and other suitable materials generated during construction will be reused on site. If a situation arises where surplus C&D material must be removed off-site, it will be undertaken in accordance with Article 27 by-product regulations and guidance to support circular resource management wherever possible.

Other surplus material and wastage may occur where material supply exceeds material demand. Surplus materials and wastes could arise from existing site materials such as concrete from demolition, and aggregates (e.g. sand, gravel, crushed stone, rock) generated on-site or delivered to site and which is surplus to requirements for use in the Proposed Development. Materials brought to site but not fully utilised

for their original purpose or stored incorrectly can result in waste such as damaged products, off cuts and surplus products, as well as mixed municipal waste and food waste associated with the construction staff working on the sites.

Small quantities of hazardous wastes may arise during the construction phase, associated with the maintenance of construction machinery or with chemicals required as part of construction activities. These hazardous wastes will be appropriately stored, handled and disposed of in accordance with relevant waste management legislation and best environmental practice.

The potential impact associated with construction waste generation is considered to be neutral.

16.5.1.3.5 Made Ground

The disturbance or storage of contaminated made ground during construction can lead to the release of chemical pollutants into the air, ground or water through remobilisation of contaminants. No contaminated land has been identified within the study area following desk based and site investigation. In the event that previously unidentified contamination is found during the construction works, the proposed management/mitigation measures in Section 16.6.1.2 will be applied.

Due to the potential of remobilised unidentified contaminants to pollute the environment, the impact significance of made ground is therefore assessed as moderate, in the absence of mitigation. However, relatively minor deposits of man-made fill or 'Made Ground' have been recorded along parts of the Proposed Development, with no associated contamination identified.

16.5.1.3.6 Hazardous

Small quantities of hazardous waste may arise during construction activities, primarily associated with the maintenance of construction machinery (e.g. oils, fuels or lubricants) or from the use of chemicals required during construction. Any such materials will be stored, handled and disposed of in accordance with relevant waste management legislation and best practice to minimise the risk of accidental spills or contamination.

No asbestos-containing materials have been identified within the Proposed Development based on the available information (refer to Chapter 4: Project Description). However, in the unlikely event that asbestos-containing materials are encountered during demolition works, these will be managed and removed by suitably licensed contractors in accordance with relevant health, safety and waste legislation.

Given the limited quantities of hazardous materials likely to arise and the implementation of standard environmental management controls, the potential impact associated with hazardous waste is considered to be low with a neutral significance.

16.5.1.3.7 Municipal Waste

Small volumes of general municipal wastes will be generated by construction staff during the Construction Phase (e.g. from site offices and welfare facilities). Segregation facilities will be provided on the construction site to ensure that recovery and recycling of such wastes is maximised. Where generated, food waste will be segregated and managed in accordance with the Waste Management (Food Waste) (Amendment) Regulations 2024.

Considering the minor quantities of municipal waste that will be generated during the construction phase and the available treatment capacity for this waste stream, the potential impact is considered to be neutral.

16.5.1.3.8 Waste Management

Where waste materials are not stored, handled, transported or managed (recovered or disposed of) correctly and where sewage associated with temporary site toilets is not managed appropriately (i.e. collected, treated and disposed or recovered appropriately), there is the potential for the pollution of air, soil, groundwater and/or surface waters to occur. For example, such instances could occur by locating unmanaged stockpiles of wastes too close to watercourses or drainage networks.

In the absence of management or mitigation, the potential impact of waste management is assessed as moderate due to the potential to cause pollution of the surrounding environment. However, the implementation of the Construction and Demolition Waste Management Plan, see Appendix C16.03, and other mitigation measures outlined in Section 16.6 will ensure that waste materials are appropriately managed, and the resulting impact is expected to be low and short term.

16.5.1.3.9 Conclusion on Waste / Resources

All the materials generated during construction, including excavated soil and stone and suitable demolition materials, are to be re-used within the works. This approach minimises waste generation and reduces the requirement for off-site waste management.

Considering all volume of waste expected to be generated from the construction of the Proposed Development will be reused on site, the impact will be low. The magnitude is therefore considered to be low.

The construction phase of the Proposed Development is not predicted to give rise to significant impacts.

Construction and Excavation Phase Impacts are summarized in Table 16-23.

Table 16-23: Summary of Impacts for Construction Activities

Assessment Topic	Potential Impact
Demolition Waste	Neutral, Low, Negligible, and Short-term
Excavation Waste	Neutral, Low, Negligible, and Short-term
Construction Waste	Neutral, Low, Negligible, and Short-term
Municipal Waste	Neutral or Slight, Low, Negligible, and Short-term

16.5.2 Operational and Maintenance Phase Impacts

16.5.2.1 Non-Agricultural Properties

At operational stage, non-agricultural property may be affected by traffic noise, emissions from vehicles on the new road, changes to the visual aspect from the property as new structures are introduced and associated impacts on residential amenity. These impacts are assessed within Chapter 6: Traffic & Transportation, Chapter 7: Population, Chapter 12: Air Quality, Chapter 14: Noise & Vibration, and Chapter 18: Landscape & Visual. Impacts from land take and demolition are addressed in Appendix C16.01 and have been discussed above under Section 16.5.1.

16.5.2.2 Utilities

During the operational and maintenance phase there will be no requirement to further impact on utilities. The impacts associated with utilities in the operational and maintenance phase are considered to be **Negligible.**

16.5.2.3 Waste / Resources

The main potential impacts from the operational and maintenance phase of the Proposed Development will arise from road and constructed wetland/attenuation pond maintenance, landscape maintenance and waste generated through littering. The predicted characteristics of the impacts resulting from the operation of the road are considered negligible due to the expected low volume of maintenance wastes. It is envisaged that a high proportion of this material will be green, biodegradable wastes in nature.

The design life for road pavement surface courses is expected to be eight to ten years. After this duration, the skid resistance may decrease due to deterioration of the road surface and therefore localised repairs, re-surfacing or overlaying will be undertaken. Only in exceptional circumstances will the surface course be

required to be planned out and re-laid. Full replacement of road surfaces within this timeframe is not expected Therefore, the waste likely to be generated during the operation phase of the project is considered to be negligible in overall term.

Where planning and/ or removal of bituminous materials does happen, then, road plannings may be classified as by-product, where the relevant criteria are met, including the EPA National Criteria for the safe reuse of site-won asphalt road plannings (BP-N001/2023). If the material is classified as a waste, then it may undergo further treatment (e.g. recovery or recycling) and may subsequently achieve end-of-waste status in accordance with Article 28 of the European Communities (Waste Directive) Regulations 2011, as amended. Overall, the magnitude of the impact is deemed to be low, and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of **slight adverse significance**, which is not significant in EIA terms.

Construction and Excavation Phase Impacts are summarized in Table 16-24.

Table 16-24: Summary of Impacts for Operational Activities

Assessment Topic	Potential Impact
Maintenance waste	Neutral or Slight, Low, Minor and Long-term
Municipal waste	Neutral or Slight, Low, Minor and Long-Term

16.6 Mitigation Measures

16.6.1 Construction Phase Mitigation Measures

16.6.1.1 Non-Agricultural Properties

The land take has already been mitigated through design where every effort has been made to restrict land take. Incursion into property boundaries arises only in unavoidable areas. Embedded mitigation is set out in Appendix C16.01 as relevant.

Further embedded mitigation has been provided by:

- Any lands temporarily acquired only, will be made good as per Section 4.11.2.3 of Chapter 4: Project Description.
- Construction works that affect access points to businesses and residences will be scheduled in such a way as to minimise disruption. Where accesses are affected by construction activities, affected property owners/ occupiers will be notified in advance. See Section 4.11.7.2 of Chapter 4: Project Description.
- Arrangements will be in place to manage boundary treatment as set out in Section 4.11.2.3 of Chapter 4: Project Description.

It is also noted that compensation will be paid with respect to lands subject to CPO.

Mitigation measures regarding traffic, population, air, noise and vibration and visual impact are outlined within Chapter 6: Traffic & Transportation, Chapter 7: Population, Chapter 12: Air Quality, Chapter 14: Noise & Vibration, and Chapter 18: Landscape & Visual of the EIAR respectively and in conjunction with the above, will reduce the significance of effects from the construction of the Proposed Development on land take relating to non-agricultural properties.

16.6.1.2 Utilities

Consultation have been undertaken with all the major utility companies regarding the design and consultations will continue through the design development. All possible precautions will be taken by the appointed contractor to avoid unplanned interruptions to any services during the Construction Phase of the

Proposed Scheme. These measures will be outlined by the Contractor prior to excavation works being commenced. These will ensure the latest service records will be sought; service providers will be consulted and localised confirmatory surveys will be undertaken during the detailed design stage to verify the identified location of and existence of existing services and methods such as ground penetrating radar (GPR) and slit trenching in the verge areas will be used in this verification process. Where works are required in and around known utility infrastructure, precautions will be implemented by the Contractor to protect the infrastructure from damage, in accordance with best practice methodologies and the requirements of the utility companies. Protection measures during construction will include warning signs and markings indicating the location of utility infrastructure, safe digging techniques in the vicinity of known utilities, and in certain circumstances where possible, isolation of the section of infrastructure during works in the immediate vicinity. Measures to minimise disruption during diversion works will be planned in advance by the Contractor. These measures will ensure prior notification will be given to all impacted properties. Interruptions will be planned to be minimised.

Electric Supply

Conflicts with the LV and MV (below 38 kV) network have been discussed with ESB Networks and proposed resolution will be by way of localised diversion, undergrounding or raising power lines. The technical term for the intrusion of a planned development with an existing circuit is a 'conflict'. ESB Networks have a dedicated Conflicts section, and the resolution of 'conflicts' is an established practice, occurring by way of localised re-design or diversion.

Each conflict location was discussed as an individual identity with ESB Networks. For the existing underground locations, the general resolution is to provide new underground ducting and cable route through the Proposed Development and divert the existing cable. For the OHL, the general resolution is to provide new sets of poles to carry the existing OH wires.

Conflicts with the existing 110kV network have been discussed with ESB Networks. The 110 kV network comprises OH conductors, supported on double-wood pole sets along straights, with lattice steel structures (known as "angle towers") where the circuit alignment changes direction. Where resolution is necessary it is proposed by way of localised diversion, or by replacing / raising existing pole sets and towers in immediate proximity to the planned road corridor to ensure adequate separation distance between the OH conductors and ground levels (known as "vertical clearance"). At some locations the existing towers can be retained at their current location and the Proposed Development will pass underneath. Where the vertical clearance is available no works will be required. Where the line will need to be raised between towers to ensure adequate vertical clearance, 'ice loading' will be considered (this is, a greater sag on the conductors due to the additional weight of ice).

Consultation has taken place with ESB Networks and conflict references S1 ESB 06, S1 ESB 08, S1 ESB 31, S2 ESB 02, S2 ESB 16, S3 ESB 03 and S3 ESB 16 were identified as having impacts on the 110kV High Voltage (HV) OH transmissions adjacent to the Proposed Development. The proposed diversion is illustrated in Volume D: Book of Drawings. Appendix C16.04 provides details of the ESB pole sets proposed.

Subject to the statutory approval process, and consistent with established practice in this regard, the detailed design of these identified 'conflict' resolutions will be developed subject to statutory approval for the Proposed Development. Any detailed design will not diverge to any material extent from that which is proposed above, and which is proposed in this application, and which is subject to environmental assessment under EIA.

Section 1

There are 30 interface points with the high voltage (38 kV and 110kV) network, and medium and LV (below 38 kV) network. Conflict resolution at these interfaces is given in Table 16-25, have been agreed with ESB Networks, and are proposed in this application.

Table 16-25: Electricity Network Mitigation Section 1

Conflict Ref. No.	ESB Line Type	Road Reference Approx. Chainage	Description and Significance	Proposed Resolution
S1 ESB 01	Low Voltage OH	L-6564 Connector 1+280 to 1+420m	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 02	38kV OH Line	L-6564 Connector 0+560m to 1+250m	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 03	Low & Medium Voltage OH	Mainline 1.1 0+400m to 0+450m	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 04	38kV OH Line	Mainline 1.2 0+070m	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 05	Medium Voltage OH	Mainline 1.2 0+100 (and LX-1001)	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 06	110kV OH Line	Mainline 1.2 0+300m to 0+400	Transverse / Vertical conflict with proposed alignment	Existing pole sets to be retired and replaced with new 110kV wooden polesets along the existing overhead 110kV circuit line.
S1 ESB 07	Low Voltage OH Line	Mainline 1.2 1+100m	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 08	110kV OH Line	Mainline 1.2 1+030m to 3+020	Longitudinal conflict with towers and pole sets along proposed alignment	Realignment of overhead 110kV circuit line along proposed mainline including multiple 110kV wooden polesets and steel pylons.
S1 ESB 09	Medium Voltage OH	Ballybofey Link Road 0+700m	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 10	Low Voltage OH Line	Mainline 1.2 1+950m to 2+560m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 11	Low Voltage OH Line	Mainline 1.2 2+350m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 12	Medium Voltage OH	Ballybofey Link Road 1+950m	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 13	Low Voltage OH Line	Mainline 1.2 2+525	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 14	Low Voltage OH Line	Mainline 1.2 2+790m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 15	Low Voltage OH Line	Mainline 1.2 3+130m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 16	Low Voltage OH	Mainline 1.2 3+750m	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network

Conflict Ref. No.	ESB Line Type	Road Reference Approx. Chainage	Description and Significance	Proposed Resolution
S1 ESB 17	Low Voltage OH Line	Mainline 1.2 4+250m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB18	Low Voltage OH Line	Mainline 1.2 4+460m to 4+480m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 19	Low Voltage OH Line	Mainline 1.2 4+800m to 5+050m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 20	Medium Voltage OH	Mainline 1.2 5+090m	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 21	Low Voltage OH	Mainline 1.2 5+700m (and L-7094)	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 22	Low Voltage OH Line	Mainline 1.2 6+350m to 6+720m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 23	38kV OH Line	N15 Primary Road Connector 0+600m	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 24	MV OH Line	N15 Primary Road Connector 0+700m (and LX-1004)	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 25	Low Voltage OH Line	N15 Primary Road Connector 0+830m to 0+910m	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 26	Low Voltage OH Line	N15 Primary Road Connector 1+150m	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 27	MV OH Line	Mainline 1.2 7+775m	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 28	Low Voltage OH	Mainline 1.2 7+900m (L-66742 tie-in)	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 29	Medium Voltage OH	N15 Primary Road Connector 2+050m (and L-2714)	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 30	Low Voltage OH	N15 Primary Road Connector 2+750	Transverse / Vertical conflict with proposed alignment	Realignment of the existing network
S1 ESB 31	110kV	Mainline 1.2 1+030m to 1+125m	Transverse / Vertical conflict with proposed alignment	Existing polesets to be retired and replaced with new 110kV wooden polesets along existing overhead 110kV circuit line.

Section 2

There are 25 interface points with the high voltage (38 kV and 110kV) network, and medium and LV (below 38 kV) network. Conflict resolution at these interfaces is given in Table 16-26, have been agreed with ESB Networks, and are proposed in this application.

Table 16-26: Electricity Network Mitigation Section 2

Conflict Ref. No.	ESB Line Type	Road Reference Approx. Chainage	Description and Significance	Proposed Resolution
S2 Lett 01	38kV OH Line	L-1064 Connector 0+830m	Transverse / vertical conflict with the proposed alignment	Install future underground infrastructure so as not to conflict with each other
S2 Lett 02	38kV UG Line	Mainline 2.1 0+20m	Transverse / vertical conflict with proposed alignment	Install future underground infrastructure so as not to conflict with each other
S2 ESB 01	Low Voltage OH Line	L-1064 Connector 0+270m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 02	110kV OH Line	L-1064 Connector 0+920m	Transverse / vertical conflict with proposed alignment	Letterkenny Trillick 110kV line in span 5-6, install a new 110kV wooden poleset.
S2 ESB 03	Low Voltage OH Line	L-1064/L-5794 Junction	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 04	Med. Voltage OH Line	Mainline 2.1 0+150m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 05	38kV OH Line	L-1094 Connector 0+100 & 0+410	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 06	38kV OH Line	L-1094 Connector 0+100 & Mainline 2.2 0+450	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 07	Low Voltage OH Line	L1094 Connector 0+410m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 08	Med. Voltage OH Line	LX-2004 0+180m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 09	Low Voltage OH Line	L-5784 Connector 0+600m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 10	Low Voltage OH Line	Mainline 2.2 1+510m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 11	38kV OH Line	Mainline 2.2 1+590m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 12	Low Voltage OH Line	Mainline 2.2 2+220m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 13	Med. Voltage OH Line	LX-2009 0+10m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 14	Med. Voltage UG Cable	LX-2009 0+155m	Transverse / vertical conflict with proposed alignment	Maintain and protect existing infrastructure where possible. Realign only where required.
S2 ESB 15	Low Voltage OH Line	Bonagee and Mainline 2.6 1+100m to 1+400m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network

Conflict Ref. No.	ESB Line Type	Road Reference Approx. Chainage	Description and Significance	Proposed Resolution
S2 ESB 16	110kV OH Line & 38kV OH Line	Mainline 2.6 0+130m	Existing tower clash with proposed alignment	Construct new ESB tower adjacent to proposed 110kV alignment; retiring old tower.
S2 ESB 17	38kV UG Line	Ballyraine Junction & N56 tie-in	Transverse / vertical conflict with proposed alignment	Maintain and protect existing infrastructure where possible. Realign only where required.
S2 ESB 18	Low Voltage OH Line	L-11141 Connector 0+130m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 19	Med. Voltage & Low Voltage OH Lines	L-5494 Connector 0+400m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 20	Low Voltage OH Line	Mainline 2.4 2+300m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 21	Med. Voltage & Low Voltage OH Lines	Mainline 2.4 2+560m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 22	38kV OH Line	Mainline 2.4 2+730m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network
S2 ESB 23	Low Voltage OH Line	Mainline 2.4 3+130m	Transverse / vertical conflict with proposed alignment	Realignment of the existing network

Section 3

There are 27 interface points with the ESB high voltage (38 kV and 110 kV) network, and medium and LV (below 38 kV) network. Conflict resolution at these interfaces is given in Table 16-27, have been agreed with ESB Networks, and are proposed in this application.

Table 16-27: Electricity Network Mitigation Section 3

Conflict Ref. No.	ESB Line Type	Approx. Mainline Chainage	Description and Significance	Proposed Resolution
S3 ESB 01	Low Voltage OH Line	0+000 to 0+400	Longitudinal and vertical conflict with proposed mainline alignment near Pluck	Realignment of the existing network
S3 ESB 02	38kV OH Line	0+750	Transverse and vertical conflict with proposed mainline alignment	Maintaining the existing network infrastructure and ensuring minimum clearance can be achieved
S3 ESB 03	110kV OH Line	1+950	Transverse and vertical conflict with proposed mainline and side road alignment west of Drumoghill	Existing 110kV double wooden pole set replaced with a higher 110kV double wooden pole set
S3 ESB 04	Low Voltage OH Line	2+700	Transverse and vertical conflict with proposed mainline alignment and pond south of Drumoghill	Realignment of the existing network
S3 ESB 05	Low Voltage OH Line	3+300	Transverse and vertical conflict with proposed mainline alignment	Realignment of the existing network
S3 ESB 06	Low Voltage OH Line	4+500	Transverse and vertical conflict with proposed alignment of Mondooey link	Realignment of the existing network

Conflict Ref. No.	ESB Line Type	Approx. Mainline Chainage	Description and Significance	Proposed Resolution
S3 ESB 07	Low Voltage OH Line	5+100	Transverse conflict with proposed mainline alignment north of Galdonagh Road	Realignment of the existing network
S3 Lett 01	38Kv OH/UG Line	5+850	Transverse conflict with proposed mainline alignment at Sheskinapoll	38kV line to be installed underground so as not to conflict with Proposed Development
S3 ESB 08	Low Voltage OH Line	6+200	Transverse conflict with proposed mainline alignment at Sheskinapoll	Realignment of the existing network
S3 ESB 09	Medium Voltage OH Line	7+050	Transverse conflict with proposed mainline alignment at Slievebuck	Realignment of the existing network
S3 ESB 10	Medium Voltage OH Line	7+150	Transverse conflict with proposed mainline alignment at Slievebuck	Realignment of the existing network
S3 ESB 11	Low and Medium Voltage OH Lines	7+500	Transverse and vertical conflict with medium and low voltage lines at Ballinalecky Junction	Realignment of the existing network
S3 ESB 12	Low Voltage OH Lines	7+500	Transverse and vertical conflict low voltage lines at existing N14 and R236 at Ballinalecky Junction	Realignment of the existing network
S3 ESB 13	Low and Medium Voltage OH Lines	9+000 to 9+400	Longitudinal, transverse and vertical conflict with proposed mainline north of and at Whitecross crossroads	Realignment of the existing network
S3 ESB 14	Medium Voltage OH Lines	9+400	Transverse conflict at side road tie in, local road.	Realignment of the existing network
S3 ESB 15	Low Voltage OH Lines	10+650	Transverse conflict with proposed mainline alignment	Realignment of the existing network
S3 ESB 16	110kV OH Line	12+700	Transverse conflict with proposed mainline alignment	One new 110kV double wooden pole set along existing 110kv line
S3 ESB 17	Medium Voltage OH Lines	13+000	Transverse conflict with proposed mainline alignment at Tamnawood	Realignment of the existing network
S3 ESB 18	Low Voltage OH Lines	13+400	Transverse conflict with proposed mainline alignment Tamnawood	Realignment of the existing network
S3 ESB 19	Medium Voltage OH Lines	13+500	Transverse and vertical conflict with lines at Tamnawood junction in Ballindrait	Realignment of the existing network
S3 ESB 20	Low and Medium Voltage OH Lines	14+000	Transverse and vertical conflict with proposed mainline at L-2444 Cavanacor	Realignment of the existing network
S3 ESB 21	Low Voltage OH Lines	14+300	Transverse and vertical conflict with proposed mainline at River Deele crossing	Realignment of the existing network
S3 ESB 22	Low Voltage OH Lines	14+200	Longitudinal and Transverse conflicts with realigned L-2444 at Cavanacor	Realignment of the existing network
S3 ESB 23	Low Voltage OH Lines	15+100	Transverse conflict with proposed mainline at Murlough	Realignment of the existing network

Conflict Ref. No.	ESB Line Type	Approx. Mainline Chainage	Description and Significance	Proposed Resolution
S3 ESB 24	Low Voltage OH Lines	15+950 to 16+400	Longitudinal and transverse conflicts with proposed mainline from Croaghan Heights	Realignment of the existing network
S3 ESB 25	Low Voltage OH Lines	17+050	Transverse conflict with proposed mainline alignment	Realignment of the existing network
S3 ESB 26	Medium Voltage OH Lines	17+300	Transverse conflict with proposed mainline alignment at existing N15 Lifford – Stranorlar road	Realignment of the existing network

Telecommunications

When dealing with conflict resolution the cost will largely depend on the type of cable in question. Copper and fibre optic are the two main cable types. When crossing Eir services with a new road embankment, the current standard procedure will be followed, where an access chamber will be introduced on either side of the road. Consultation with Eir personnel will continue during the detailed design and construction phases. Similarly, proposals for any permanent diversions will be finalised during the detailed design stage in consultation with Enet.

Sections 2 and 3 of Proposed Development have seven and twelve direct conflict interfaces, respectively, with existing Project Kelvin apparatus (fibre optic utility) which has national strategic significance. The conflict resolution for these interfaces has been discussed and agreed with EXA Infrastructure who are responsible for the asset and are presented below.

Section 1

There are 21 interface points with the EIR underground and overhead services affected by the Proposed Development. The 'conflict' resolutions for these interfaces are given in Table 16-28.

Table 16-28: Section 1 EIR Conflicts

Conflict Ref. No.	Road Reference Approx. Chainage	Description and Significance	Proposed Resolution
S1 EIR 01	Mainline 1.1 0+100m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted along realigned N15.
S1 EIR 02	Mainline 1.2 1+1050m	Vertical conflict with the proposed mainline.	Existing utility infrastructure diverted across mainline.
S1 EIR 03	Mainline 1.2 1+820m Ballybofey Link Road 0+675m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted across mainline at Ballybofey grade separated junction.
S1 EIR 04	Ballybofey Link Road 1+930m And LX-1003	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted to new verge at Ballybofey link road tie-in to N15.
S1 EIR 05	Mainline 3+930m And L-2784 Connector	Longitudinal & vertical conflict with the proposed mainline	Existing utility infrastructure diverted across mainline.
S1 EIR 06	Mainline 1.2 4+100m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted across mainline at Underpass N15R042.

Conflict Ref. No.	Road Reference Approx. Chainage	Description and Significance	Proposed Resolution
S1 EIR 07	Mainline 1.2 4+950m L-2724 Connector	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted across mainline and along verge of L-2724 connector.
S1 EIR 08	Mainline 1.2 6+820m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted across mainline at overbridge N13O069.
S1 EIR 09	L-6674 Connector 0+000m	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted to L-6674 connector verge.
S1 EIR 10	LX-1004 0+540m	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted to downgraded N13 verge.
S1 EIR 11	N15 Primary Road Connector 0+700m	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted to downgraded N13 verge.
S1 EIR 12	LX-1002 0+000m	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted to R252 verge.
S1 EIR 13	Mainline 1.3 0+450m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted to realigned N13 verge.
S1 EIR 14	LX-1004 0+100m	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted to downgraded N13 verge.
S1 EIR 15	Mainline 1.2 0+470m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure to be retained in its current location where minimum depth/clearance can be achieved.
S1 EIR 16	Mainline 1.2 2+350m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure will be retained in its current location where minimum depth/clearance can be achieved.
S1 EIR 17	L-2724 Connector 0+970m And AR 1.23	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure will be retained in its current location where minimum depth/clearance can be achieved.
S1 EIR 18	L-6674 Connector 0+350m	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure will be retained in its current location where minimum depth/clearance can be achieved.
S1 EIR 19	Meenavoy Junction	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted to Meenavoy Junction verge.
S1 EIR 20	N15 Primary Connector 3+050m And Treanamullin tie-in	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted to realigned N15 verge.
S1 EIR 21	Treanamullin Junction	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure will be retained in its current location where minimum depth/clearance can be achieved.

Section 2

There are 10 interface points with the EIR underground and overhead services affected by the Proposed Development. The ‘conflict’ resolutions for these interfaces are given in Table 16-29.

Table 16-29: Section 2 EIR Conflicts

Conflict Ref. No.	Road Reference Approx. Chainage	Description and Significance	Proposed Resolution
S2 EIR 01	L-1064 Connector 0+25m	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted to L-1064 verge.
S2 EIR 02	LX-2004 Link	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted to downgraded N13 verge.
S2 EIR 03	LX-2004 0+350m	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted to downgraded N13 verge.
S2 EIR 04	LX-2004 0+490m	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted to downgraded N13 verge.
S2 EIR 05	LX-2002 at the L-5784 Connector Junction	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted at L-5784 connector junction on the downgraded N13.
S2 EIR 06	Mainline 2.5 0+450m	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted across mainline.
S2 EIR 07	L-1114 Connector 0+050m	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted to L-1114 verge.
S2 EIR 08	LX-2005 0+700m	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted across mainline and to L11141 connector verge.
S2 EIR 09	Mainline 2.4 2+350m	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure across mainline and alone mainline verge.
S2 EIR 10	Ballyraine Junction	Longitudinal & vertical conflict with the proposed alignment.	Existing utility infrastructure diverted to Ballyraine Junction verge.

Section 3

There are 28 interface points with the EIR underground and overhead services affected by the Proposed Development. The ‘conflict’ resolutions for these interfaces are given in Table 16-30.

Table 16-30: Section 3 EIR Conflicts

Conflict Ref. No.	Approximate Mainline Chainage	Description and Significance	Proposed Resolution
S3 EIR 01	0+300m	Longitudinal conflict with the proposed mainline.	Existing utility diverted to L1294 side road verge
S3 EIR 02	2+300m – 2+700m	Longitudinal conflict with the proposed mainline.	Existing utility diverted to LX 3014 Drumoghill West side road verge
S3 EIR 03	3+500m	Longitudinal conflict with the proposed mainline.	Existing utility infrastructure diverted to Access Road verge
S3 EIR 04	4+000m – 4+500m	Longitudinal conflict with the proposed mainline.	Existing utility infrastructure diverted to LX3014 Doorable side road verge and beneath mainline.
S3 EIR 05	5+100m – 5+400m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility diverted to LX 3014 Ballyholey side road verge

Conflict Ref. No.	Approximate Mainline Chainage	Description and Significance	Proposed Resolution
S3 EIR 06	6+000m – 6+600m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility diverted to LX 3014 Sheskinapoll side road verge
S3 EIR 07	7+300m – 7+500m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted to R236 LX3014 Link side road verge
S3 EIR 08	R236 – 0+600m – 0+700m	Longitudinal & vertical conflict with the proposed sideroad.	Existing utility infrastructure diverted to R236 Ballinalecky side road verge
S3 EIR 09	R236 – 0+500m – 0+600m	Longitudinal & vertical conflict with the proposed sideroad.	Existing utility infrastructure diverted to access road verge
S3 EIR 10	7+800m	Longitudinal & vertical conflict with the proposed mainline	Existing utility infrastructure diverted to access road verge
S3 EIR 11	R236 – 0+400m-0+600m	Longitudinal & vertical conflict with the proposed sideroad.	Existing utility infrastructure diverted to access road verge
S3 EIR 12	R236 – 0+000m-0+100m	Longitudinal & vertical conflict with the proposed sideroad.	Existing utility infrastructure diverted to R236 Ballinalecky side road verge
S3 EIR 13	8+100m – 8+400m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted to access road verge
S3 EIR 14	9+400m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted to LX3014 Tullyrap / L2374 Whitecross side road verge.
S3 EIR 15	SR 9+200m -9+500m	Longitudinal & vertical conflict with the proposed sideroad.	Existing utility infrastructure diverted to L2374 Whitecross Tie In side road verge
S3 EIR 16	SR 0+100m-0+200m	Longitudinal & vertical conflict with the proposed sideroad.	Existing utility infrastructure diverted to L2374 Whitecross side road verge.
S3 EIR 17	10+200m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted to LX3014 Tullyrap side road verge.
S3 EIR 18	10+300m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted to LX3014 Tullyrap side road verge.
S3 EIR 19	10+800m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted to L6104 Broadlea side road verge
S3 EIR 20	SR 0+000m-0+300m	Longitudinal & vertical conflict with the proposed sideroad.	Existing utility infrastructure diverted to L2444 Ballindrait Local Road South side road verge.
S3 EIR 21	14+000m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted to L2444 Ballindrait side road verge
S3 EIR 22	SR 1+800m – 2+000m	Longitudinal & vertical conflict with the proposed sideroad.	Existing utility infrastructure diverted to L2444 Ballindrait side road verge
S3 EIR 23	14+600m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted to R264 side road verge
S3 EIR 24	16+000m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted to L6144 Lifford Common side road verge
S3 EIR 25	16+900m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted beneath mainline
S3 EIR 26	17+200m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility diverted adjacent to mainline

Conflict Ref. No.	Approximate Mainline Chainage	Description and Significance	Proposed Resolution
S3 EIR 27	17+400m	Longitudinal & vertical conflict with the proposed mainline.	Existing utility infrastructure diverted to N15 Lifford Tie in East side road verge
S3 EIR 28	N15 Tie-in – 0+100m-0+500m	Longitudinal & vertical conflict with the proposed sideroad.	Existing utility infrastructure diverted to access road verge

Section 1

There are 2 interface points with ENET underground services affected by the Proposed Development. The 'conflict' resolutions for these interfaces are given in Table 16-31.

Table 16-31: Section 1 ENET Conflicts

Conflict Ref. No.	Road Reference Approx. Chainage	Description and Significance	Proposed Resolution
S1 ENET 01	Ballybofey Link Road 0+650m L-2794 and Cappry Road	Longitudinal & vertical conflict with the proposed alignment.	Realignment of the existing network
S1 ENET 02	Ballybofey Link Road 1+930m LX-1003	Longitudinal & vertical conflict with the proposed alignment.	Realignment of the existing network

Section 2

There are 4 interface points with the ENET underground services affected by the Proposed Development. The 'conflict' resolutions for these interfaces are given in Table 16-32.

Table 16-32: Section 2 ENET Conflicts

Conflict Ref. No.	Road Reference Approx. Chainage	Description and Significance	Proposed Resolution
S2 ENET 01	Mainline 2.1 0+000m	Longitudinal & vertical conflict with the proposed alignment.	Existing infrastructure to be retained where minimum depth/clearance can be retained and diverted if not.
S2 ENET 02	LX-2004 0+400m	Longitudinal & vertical conflict with the proposed alignment.	Existing infrastructure to be retained where minimum depth/clearance can be retained and diverted if not.
S2 ENET 03	Ballyraine Junction	Longitudinal & vertical conflict with the proposed alignment.	Existing infrastructure to be retained where minimum depth/clearance can be retained and diverted if not.
S2 ENET 04	L-5784 Connector And LX-2002	Longitudinal & vertical conflict with the proposed alignment.	Existing infrastructure to be retained where minimum depth/clearance can be retained and diverted if not.

Project Kelvin interface points for Sections 2 and 3 are summarised, respectively, in Table 16-33 and Table 16-34. EXA Infrastructure have further confirmed that no Project Kelvin asset is present in Section 1 Ballybofey/ Stranorlar MD region.

Table 16-33: Section 2 Project Kelvin Conflicts

Conflict Ref. No.	Road Reference Approx. Chainage	Description and Significance	Proposed Resolution
S2 FO 01	Mainline 2.1 0+10m	Longitudinal and vertical conflict with the proposed alignment	Existing infrastructure to be retained where minimum depth/clearance can be retained and diverted if not.
S2 FO 02	Lx 2004 0+300m	Longitudinal and vertical conflict with the proposed alignment	Existing infrastructure to be retained where minimum depth/clearance can be retained and diverted if not.
S2 FO 03	Ballyraine Junction	Longitudinal and vertical conflict with the proposed alignment	Existing infrastructure to be retained where minimum depth/clearance can be retained and diverted if not.
S2 FO 04	Dromore Junction	Longitudinal and vertical conflict with the proposed alignment	Existing infrastructure to be retained where minimum depth/clearance can be retained and diverted if not.
S2 FO 05	Mainline 2.4 0+750m	Longitudinal and vertical conflict with the proposed alignment	Existing infrastructure to be retained where minimum depth/clearance can be retained and diverted if not.
S2 FO 06	Mainline 2.4 3+600m	Longitudinal and vertical conflict with the proposed alignment	Existing infrastructure to be retained where minimum depth/clearance can be retained and diverted if not.
S2 FO 07	Mainline 2.4 1+400m	Longitudinal and vertical conflict with the proposed alignment	Existing infrastructure to be retained where minimum depth/clearance can be retained and diverted if not.

Table 16-34: Section 3 Project Kelvin Conflicts

Conflict Ref. No.	Approximate Mainline Chainage	Description and Significance	Proposed Resolution
S3 FO 01	0+000m	Longitudinal and vertical conflict with the proposed N13 Derry realignment	Existing utility infrastructure will be retained in its current location where minimum depth/clearance can be achieved.
S3 FO 02	0+000m	Longitudinal and vertical conflict with the proposed N13/N14 Pluck roundabout	Existing utility infrastructure will be retained in its current location where minimum depth/clearance can be achieved.
S3 FO 03	0+300m – 0+500m	Longitudinal and vertical conflict with the proposed side road	Existing utility infrastructure will be diverted to side road verge.
S3 FO 04	2+300m - 2+700m	Longitudinal and vertical conflict with the proposed mainline and side road	Existing utility infrastructure diverted to side road verge.
S3 FO 05	4+000m – 4+500m	Longitudinal and vertical conflict with the proposed mainline and side road	Existing utility infrastructure diverted to side road verge.
S3 FO 06	5+100m – 5+400m	Longitudinal and vertical conflict with the proposed side road at Galdonagh	Existing utility infrastructure diverted to side road verge.
S3 FO 07	6+000m – 6+800m	Longitudinal and vertical conflict with the proposed side road	Existing utility infrastructure diverted to side road verge / along mainline verge.
S3 FO 08	7+300m – 8+400m	Longitudinal and vertical conflict with the proposed mainline and R236 junction at Ballinalecky	Existing utility infrastructure diverted adjacent to access road / mainline.

Conflict Ref. No.	Approximate Mainline Chainage	Description and Significance	Proposed Resolution
S3 FO 09	9+000m – 9+500m	Longitudinal and vertical conflict with the proposed mainline and side road at Whitecross junction	Existing utility infrastructure diverted along side road.
S3 FO 10	10+300m	Longitudinal and vertical conflict with the proposed mainline at Tullyrap	Existing utility infrastructure will be diverted beneath mainline.
S3 FO 11	10+400m	Longitudinal and vertical conflict with the proposed side road at Tullyrap	Existing utility infrastructure diverted along side road.
S3 FO 12	13-800m – 14+300m	Longitudinal and vertical conflict with the proposed side road design and Ballindrait link road roundabout at Rossgeir	Existing utility infrastructure will be diverted along side road.

Public Water and Wastewater Supply

Diversions or protection measures will be adopted with mutual agreement with UÉ and Water Services Department of Donegal County Council. It is proposed to use ductile iron pipe under the Proposed Development crossings and HDPE for other locations.

Section 1

There are 17 interface points between the Proposed Development and UÉ networks (including water supply and sewerage). Each of the conflicts listed in Table 16-35 have been discussed with UÉ and the Water Services Department of Donegal County Council.

Table 16-35: Water Conflicts Mitigation Section 1

Conflict Ref. No.	Road Reference Approx. Chainage	Description and Significance	Proposed Resolution
S1 IW 01	Mainline 1.1 0+000m (L-6564 Connector)	Longitudinal & vertical conflict with the proposed alignment	Underground Diversion
S1 IW 02	Mainline 1.1 0+270m (L-6564 Connector)	Longitudinal & vertical conflict with the proposed alignment	Underground Diversion
S1 IW 03	Dooish Junction	Longitudinal & vertical conflict with the proposed alignment	Underground Diversion
S1 IW 04	Mainline 1.2 0+150m (L-2794 Connector)	Longitudinal & vertical conflict with the proposed alignment	Underground Diversion
S1 IW 05	Mainline 1.2 0+460m	Link across mainline to L-6574	Underground Diversion
S1 IW 06	Mainline 1.2 1+050m (L-6584)	Longitudinal & vertical conflict with the proposed mainline and side road	Underground Diversion
S1 IW 07	Mainline 1.2 2+000m to 2+250m (Ballybofey SB Link and L-2794	Longitudinal & vertical conflict with the proposed mainline, link road and local side road	Underground Diversion

Conflict Ref. No.	Road Reference Approx. Chainage	Description and Significance	Proposed Resolution
S1 IW 08	Mainline 1.2 2+350m (along the R252)	Longitudinal & vertical conflict with the proposed mainline	Underground Diversion may be required for bridge piers
S1 IW 09	Mainline 1.2 2+050m (at the R252 Tie In)	Longitudinal & vertical conflict with the proposed alignment	Underground Diversion
S1 IW 10	Mainline 1.2 1+750m (Ballybofey Link Road South)	Longitudinal & vertical conflict with the proposed mainline	Underground Diversion
S1 IW 11	Mainline 1.2 3+900m (L-2784)	Longitudinal & vertical conflict with the proposed mainline	Underground Diversion
S1 IW 12	Mainline 1.2 4+600m (L-27241)	Longitudinal & vertical conflict with the proposed mainline and realigned local road L-2724	Underground Diversion
S1 IW 13	Mainline 1.2 4+550m (L-2724 Connector)	Longitudinal & vertical conflict with the proposed alignment, realigned local and access roads	Underground Diversion
S1 IW 14	Mainline 1.2 4+950m	Longitudinal & vertical conflict with the proposed mainline	Underground Diversion
S1 IW 15	Mainline 1.2 6+800m	Longitudinal & vertical conflict with the proposed mainline	Underground Diversion
S1 IW 16	N15 Primary Road Connector 0+700m (Along LX-1004 0+00 to 0+700)	Longitudinal & vertical conflict with the proposed alignment	Underground Diversion
S1 IW 17	Mainline 1.2 8+270m (existing N13)	Longitudinal & vertical conflict with the proposed mainline	Underground Diversion
S1 IW 18	Mainline 1.3 0+430	Longitudinal & vertical conflict with the proposed alignment	Underground Diversion
S1 IW 19	N15 Primary Road Connector 2+100m (L-2714)	Longitudinal & vertical conflict with the proposed alignment	Underground Diversion
S1 IW 20	N15 Primary Road Connector 2+750m	Longitudinal & vertical conflict with the proposed alignment	Underground Diversion
S1 IW 21	N15 Primary Road Connector 3+050m	Longitudinal & vertical conflict with the proposed alignment	Underground Diversion

Section 2

There are 11 interface points between the Proposed Development and UÉ networks (including water supply and sewerage). Each of the conflicts listed in Table 16-36 have been discussed with UÉ and the Water Services Department of DCC.

Table 16-36: Water Conflicts Mitigation Section 2

Conflict Ref. No.	Road Reference Approx. Chainage	Description and Significance	Proposed Resolution
S2 IW 01	L-1064 Connector 0+150m	Longitudinal & vertical conflict with the proposed alignment	Underground diversion
S2 IW 02	L-1064 / L-5794 Junction	Longitudinal & vertical conflict with the proposed alignment	Underground diversion
S2 IW 03	Mainline 2.1 0+200m	Longitudinal & vertical conflict with the proposed alignment	Underground diversion
S2 IW 04	Mainline 2.2 0+550m (LX-2004	Longitudinal & vertical conflict with the proposed alignment	Underground diversion
S2 IW 05	L-5784 Junction with existing N13	Longitudinal & vertical conflicts with the proposed alignment	Underground diversion
S2 IW 06	L-5784 0+650m	Longitudinal & vertical conflicts with the proposed alignment	Underground diversion
S2 IW 07	Mainline 2.2 2+300m L-1114	Longitudinal & vertical conflict with the proposed alignment	Underground diversion
S2 IW 08	Dromore Junction	Longitudinal & vertical conflict with the proposed alignment	Underground diversion
S2 IW 09	Mainline 2.6 1+100m (L-11142)	Longitudinal & vertical conflict with the proposed alignment	Underground diversion
S2 IW 10	Mainline 2.6 0+450m	Longitudinal & vertical conflict with the proposed alignment	Underground diversion
S2 IW 11	Ballyraine Junction	Longitudinal & vertical conflict with the proposed alignment	Underground diversion
S2 IW 12	Mainline 2.4 1+600m to 2+080m (L-5494 Connector)	Longitudinal & vertical conflict with the proposed alignment	Underground diversion
S2 IW 13	Mainline 2.4 2+200m to 2+470m	Longitudinal & vertical conflict with the proposed alignment	Underground diversion

Section 3

There are 20 interface points between the Proposed Development and UÉ networks (including water supply and sewerage). Each of the conflicts listed in Table 16-37 have been discussed with UÉ and the Water Services Department of Donegal County Council.

Table 16-37: Water Conflicts Mitigation Section 3

Conflict Ref. No.	Approximate Mainline Chainage	Description and Significance	Proposed Resolution
S3 IW 01	0+350	Longitudinal & vertical conflict with the proposed side road	Underground diversion
S3 IW 02	2+600	Longitudinal & vertical conflict with the proposed mainline	Underground diversion
S3 IW 03	3+500	Longitudinal & vertical conflict with the proposed mainline	Underground diversion
S3 IW 04	4+400	Longitudinal & vertical conflict with the proposed side road	Underground diversion
S3 IW 05	4+400	Longitudinal & vertical conflict with the proposed mainline and side roads	Underground diversion
S3 IW 06	5+200	Longitudinal & vertical conflict with the proposed mainline and side road at Galdonagh	Underground diversion
S3 IW 07	6+200	Longitudinal & vertical conflict with the proposed mainline and side roads	Underground diversion
S3 IW 08	7+800	Longitudinal & vertical conflict with the proposed mainline and R236 Ballinalecky junction	Underground diversion
S3 IW 09	9+390	Longitudinal & vertical conflict with the proposed mainline and side roads at Whitecross junction	Underground diversion
S3 IW 010	10+350	Longitudinal & vertical conflict with the proposed mainline and side road at Tullyrap	Underground diversion
S3 IW 11	10+800	Longitudinal & vertical conflict with the proposed mainline and side road at Mullnaveagh	Underground diversion
S3 IW 12	13+220	Longitudinal & vertical conflict with the proposed mainline and side road at Tamnawood	Underground diversion
S3 IW 13	13+700 (Ballindrait Link)	Longitudinal & vertical conflict with the proposed Ballindrait side road	Underground diversion
S3 IW 14	13+800	Longitudinal & vertical conflict with the proposed mainline	Underground diversion
S3 IW 15	14+050	Longitudinal & vertical conflict with the proposed mainline	Underground diversion
S3 IW 16	14+200 (Ballindrait Link)	Longitudinal & vertical conflict with the proposed Ballindrait side road and roundabout at L2444 and existing N14 Rossgeir	Underground diversion
S3 IW 17	14+650	Longitudinal & vertical conflict with the proposed mainline and side road at existing R264	Underground diversion
S3 IW 18	16+100	Longitudinal & vertical conflict with side road at Croaghan Heights	Underground diversion
S3 IW 19	17+300	Longitudinal & vertical conflict with the proposed mainline and N15 east-tie in	Underground diversion
S3 IW 20	17+500 (N15 Link)	Longitudinal & vertical conflict with the proposed N15 west-tie in	Underground diversion

Wastewater Treatment Plants

The proposed project will not impact the wastewater treatment plants in the area.

16.6.1.3 Waste / Resources

The construction phase is not predicted to give rise to significant negative impacts. However, a range of mitigation measures will be implemented to avoid or reduce negative impacts on waste and resources during the Construction Phase, including that of minimising waste disposal. The Proposed Development has been designed to minimise waste generation and maximise the reuse of site-won materials within the works, in accordance with the waste hierarchy. Excavated soil and stone and suitable construction and demolition materials will be reused within the Proposed Development, thereby reducing the need for off-site waste management.

Waste management will incorporate the principles of the waste hierarchy with prevention being the preferred approach, followed by preparing for reuse, and recycling. Other recovery and disposal are the least preferred options for waste. All waste will be managed in accordance with the waste hierarchy as set out in the Waste Framework Directive (2008/98/EC), as amended, in such a way as to prevent harm to human health, amenity and the environment.

The waste hierarchy will feature departures from for particular types of waste, where justified, in order to ensure minimal environmental impact. It is important to understand any potential wider implications and thus any unintended consequences of managing waste. For example, there will be instances were avoiding waste in the first instance would create greater environmental impact. Consideration therefore will be given by the Contractor to the relationship with other factors such as materials consumption, energy usage and the emission of carbon. The general measures detailed in Table 16-38 will be undertaken during the Construction Phase to ensure waste is managed in accordance with the waste hierarchy.

Table 16-38: Waste Management Best Practice Actions to be Adopted During the Construction Phase

Stage in Hierarchy	Action
Prevention	Standard sizes for most items will be used to avoid specials and cutting on-site. Materials will be ordered to size with minimum waste (BRE, 2012).
Prevention	Off-site construction, prefabricated products / modules and pre-cast units will be used where possible (BRE, 2012; EPA, 2015b).
Prevention	Take-back scheme arrangement with suppliers will be used. All packaging, cable drums and pallets will be collected by suppliers and not broken up (BRE, 2012).
Prevention / Preparation for Reuse	Materials will be reused (i.e. all excavated materials) on-site. (BRE, 2012).
Prevention	Main Contractor will work with all Subcontractors to identify waste minimisation and encourage all Subcontractors to reuse or recycle their own waste materials, in particular packaging (BRE, 2012).
Reduction and Recycling	Packaging requirements in materials procurement will be reduced and recycled content specified (EPA, 2015b).
Prevention	Hoarding posts will be reused, and shuttering systems used where these are required (EPA, 2015b).

Environmental Operating Plan

During the Construction Phase of the Proposed Development, the Contractor will ensure the compliant management of all waste generated by the construction activities. Circular economy principles will be incorporated within the management of materials during the Construction Phase in order to reduce the amount of materials used and waste generated by the Proposed Development.

An Environmental Operating Plan (EOP) has been prepared and is included in Appendix C4.01 and will be updated and finalised by the appointed Contractor prior to construction commencing. The EOP will be updated with any additional measures which may be required by the conditions attached to any Order of An Coimisiún Pleanála that may be granted for the Proposed Development. Implementation of the EOP will ensure disruption and nuisance are kept to a minimum. The plan has regard to the guidance contained in EPA Best Practice Guidelines in preparation of Resource Management Plans for Construction and Demolition Projects. The EOP outlines the procedures for the delivery of environmental mitigation measures and waste management during construction and provides guidance to the contractors responsible for the finalisation of the EOP.

The EOP is a live document and will be updated, as required, by the appointed Contractor and prior to commencing works on site. All the content provided in this EOP will be implemented in full by the appointed Contractor and its finalisation will not affect the robustness and adequacy of the information presented and relied upon in this EIAR. The appointed Contractor will ensure that it remains up to date for the duration of the construction period. The EOP may need to be altered during the lifecycle of the construction period to take account of monitoring results, legislative changes, outcomes of third-party consultations etc. Additional appendices may be added to the EOP to accommodate monitoring results, permits etc.

A Construction and Demolition Resource and Waste Management Plan (CDRWMP) has been prepared and will be finalised and implemented by the appointed Contractor in line with the Best Practice Guidelines for the Preparation of Resource & Management Plans for Construction and Demolition Projects (EPA 2021b). The CDRWMP in contained in Appendix C16.03 of this EIAR and outlines how waste arising during the Construction and Demolition Phase of the Proposed Development will be managed in a way that ensures compliance with the provisions of the Waste Management Act 1996, as amended. The appointed contractor will finalise the CDRWMP in advance of construction commencing.

Waste will be managed in accordance with the requirements of the Waste Management Act 1996 (as amended). The following measures will be implemented during construction by the appointed contractor, to ensure the maximum quantity of material is reused on the Proposed Development and to contribute to achieving the objectives set out in the National Waste Action Plan as follows:

- A Construction and Demolition Resource and Waste Management Plan has been prepared (see Appendix C16.03) and will be finalised and implemented by the Contractor and be in operation for the duration of the Proposed Development. This plan has been prepared in accordance with best practice including:
    - TII standards including The Management of Waste from National Roads Construction Projects (December 2017) (Transport Infrastructure Ireland, 2017).
    - Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects (EPA, 2021).
    - Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous (EPA, 2018).
    - Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan (National Roads Authority, 2007).
    - Specification for Road Works Series 100 -Preliminaries (TII, 2011)
    - Specification for Road Works Series 200 - Site Clearance (TII, 2010)
- Source segregation of waste will be in place to ensure that individual waste streams are kept separate rather than mixed.
- Excavated materials, including soil and stone, will be stored on-site in the MED areas, within the Proposed Development boundary, to be reused within the works.

- Possibilities for reuse of clean non-hazardous excavation material as fill on the site or in landscaping works will be considered following appropriate testing to ensure material is suitable for its proposed end use.
- Any identified contaminated material will be segregated and stored in an area where there is no possibility of runoff generation or infiltration to ground or surface water drainage. Care will be taken to ensure that the hotspot does not cross contaminate clean soils elsewhere throughout the site.
- Wastewaters from temporary toilets will be either discharged to the existing sewerage network or tankered off-site for disposal.
- Where necessary, waste classification testing will be undertaken on certain types of waste to confirm the appropriate classification of the waste from the EPA published List of Waste (LoW). This will confirm whether the material is non-hazardous or hazardous.
- Source segregation: Metal, timber, glass, and other recyclable material will be segregated (and waste stream colour coding will be used) during construction works and removed off site to a permitted/licensed facility for recycling. This process will be managed and tracked by the Site Environmental Manager as per the EOP
- Material management: 'Just-in-time' delivery will be used to minimise material wastage.
- Any hazardous waste that may arise during construction phase from maintenance of machinery will be appropriately contained and removed from site by authorised waste contractors as soon as practicable following generation. Where necessary prior to collection, hazardous materials will be kept in secure, sealed containers within designated areas to prevent any risk of environmental pollution. Hazardous waste warning signage will be erected to notify of the hazard.
- The site will be maintained to prevent litter and regular litter picking will take place throughout the site
- On-site office and food waste arising will be source separately at least into dry mixed recyclables, biodegradables and residual wastes.
- Waste bins, containers, skip containers and storage areas will be clearly labelled with the waste types which they should contain, including photographs as appropriate.
- Where unidentified contamination (such as potential asbestos containing material) is encountered, material shall be segregated and stockpiled on a low permeability surface with bunding and shall be covered to allow further testing of the impacted soils to enable specification of treatment and re-use, or disposal.
- While the risk of asbestos containing materials is exceptionally low, construction workers will be briefed on the possible presence of localised asbestos. Dermal contact with soils (particularly Made Ground) will be avoided wherever possible and appropriate training and Personal Protective Equipment (PPE) and Respiratory Protective Equipment (RPE) will be provided to mitigate the risk of inhalation of asbestos.
- A Demolition Survey of all buildings to be demolished will be required prior to commencement of any such demolition works. Asbestos-containing materials will only be removed from site by a suitably permitted/licensed waste Contractor and will be brought to a suitably licensed facility. The Health and Safety Authority will be contacted where needed in relation to the handling of asbestos and material will be dealt with in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006, as amended and associated approved Codes of Practice.

16.6.2 Operational and Maintenance Phase Mitigation Measures

16.6.2.1 Non-Agricultural Properties

Embedded mitigation, which is included in the design of the Proposed Development will be put in place at and following the construction phase noted earlier, including compensation, reinstatement works, provision of new access and boundary treatment in line with Section 4.11.2.3 of Chapter 4: Project Description, will minimise the ongoing and future impacts of the land take when the Proposed Development is operational. Property-specific mitigation is not required beyond the implementation of the planned accommodation works for each property as synopsised in the tables in Appendix C16.01.

Mitigation measures regarding traffic, population, air, noise and vibration and visual impact are outlined within Chapter 6: Traffic & Transportation, Chapter 7: Population, Chapter 12: Air Quality, Chapter 14: Noise & Vibration, and Chapter 18: Landscape & Visual of the EIAR respectively and in conjunction with the above, will reduce the significance of effects from the construction of the Proposed development on non-agricultural properties.

No further mitigation specific to the operational phase is required.

16.6.2.2 Utilities

The impacts associated with utilities in the operational and maintenance phase are considered to be **negligible** and therefore do not require mitigation.

16.6.2.3 Waste / Resources

The main potential impacts on waste and resources during the Operational Phase will be waste generated from road and verge maintenance activities. There are adequate facilities in the region to allow for the appropriately licensed or permitted treatment of this material.

Waste silts and hydrocarbons/oily waters collecting onsite drainage interceptors will be managed by specialist contractors as and when required. The specialist contractors will be appointed to clean out the interceptors and ensure the waste material is sent to a suitable licensed facility for treatment and/or disposal.

The impact during these maintenance activities is predicted not to be **significant** in the context of the Proposed Development during the Operational Phase. As the effect of operational phase is expected to be not significant, no further mitigation measures are required.

16.7 Predicted Residual Impacts

The Proposed Development will not have a significant effect on non-agricultural properties from a national, regional or county perspective with respect to impacts arising from land take. It will have residual effects from land take from a local / individual perspective as detailed in Appendix C16.01, and as summarised within this chapter, which will most likely remain at the levels identified for each individual property, notwithstanding compensation or other mitigation. There are 47 no. Significant or greater residual effects identified on non-agricultural material assets that will arise from land take. For the most part however, these are unavoidable and relate to the full acquisition of properties to accommodate the new development.

The residual impacts associated with utilities following mitigation measures are considered to be **negligible**.

The implementation of mitigation measures proposed will result in a reduction in resources consumed and waste generated thereby reducing the impact of the Proposed Development. The mitigation and control measures will be implemented. As a result of the mitigation measures, the residual impacts associated with the construction of the Proposed Development will not be Significant. No significant effects are predicted during the operation of the Proposed Development. The residual impacts associated with waste following mitigation measure are considered to be slight to **imperceptible**.

16.8 Monitoring

16.8.1 Non-Agricultural Properties

No specific monitoring requirements are proposed; no impacts are expected to arise over time such as would result in changes to the land take proposed.

16.8.2 Utilities

No specific monitoring is required for utilities.

16.8.3 Waste and Resources

During the construction phase of the Proposed Development, the Site Environmental Manager will maintain records relating to the management and reuse of site-won materials. These records will document the quantities of materials generated and reused within the works, including excavated soil and stone and suitable construction and demolition materials. Where materials cannot be reused within the Proposed Development and require off-site management (which is not anticipated or would be limited to very small quantities), records will include details such as waste classification, quantity, authorised haulier, destination facility and relevant authorisations.

16.9 Project Wide Effects

This section addresses the effects of the three road sections of the Proposed Development when considered together.

16.9.1 Non-Agricultural Properties

There is no potential for additional impact to arise with respect to land take from non-agricultural properties if all three sections of the road scheme are constructed simultaneously. The area of land take from an individual property or its impact on the receptor will not change in this scenario.

Overall totals from the Proposed Development in its entirety with respect to significance of effect on non-agricultural material assets arising from land take are provided above within Section 16.5.1.1.

16.9.2 Utilities

There is limited potential for additional effects to arise should the three road sections be constructed simultaneously due to the distance between the projects. This potential exists only where the same utilities are disrupted at the same time during any simultaneous construction or decommissioning phases with the Proposed Development. There is potential for cumulative effects to arise should Section 2 and Section 3 be constructed simultaneously due to the interface of the two sections at the Pluck roundabout.

However, it is good practice for all construction works to implement measures to avoid/ minimise disruption to services through prior consultation with utility providers in advance of works along with implementing measures to avoid/minimise disruption to services. In the unlikely event of services being disrupted unintentionally, it is again good practice to restore services as quickly as possible.

The potential for any impact or disruption to utility services during the construction or decommissioning phases is predicted to be of local spatial extent, brief to temporary in duration and of high reversibility. It is predicted that any potential impact or disruption would affect the utility service involved directly. The magnitude is therefore, considered to be **negligible**.

The sensitivity of the receptor is considered to be **medium.**

Overall, the magnitude of the impact is deemed to be **negligible** and the sensitivity of utility assets in the material assets study area is considered to be medium. The cumulative effect will, therefore, be of **slight adverse significance**, which is not significant in EIA terms.

16.9.3 Waste

There is potential for overall effects to arise in relation to the demand on available waste management facilities if all three road sections were constructed simultaneously. However, the Proposed Development has been designed to maximise the reuse of site-won materials within the works, including excavated soil and stone and suitable construction and demolition materials. As such, the quantity of waste requiring off-site management is expected to be negligible. Given the limited quantity of waste anticipated to require off-site management, no meaningful demand will be placed on the available authorised waste management capacity within the region. The magnitude of the cumulative impact is therefore considered to be negligible.

The sensitivity of the receptor is considered to be low. Overall, the effects for waste are considered to be **neutral** and **not significant** in EIA terms.

16.10 Cumulative Effects

The cumulative assessment of relevant plans and projects has been undertaken separately in Chapter 19 of this EIAR.

16.11 Transboundary Effects

16.11.1 Non-Agricultural Properties (Land Take)

There are no transboundary effects arising from land take from the Proposed Development with respect to non-agricultural material assets as the relevant impacts are specific to the landholdings in question. There is no land take proposed to occur within Northern Ireland. There are no landholdings which span the boundary of the Republic of Ireland and Northern Ireland.

16.11.2 Utilities

There are no transboundary effects on utilities as a result of the Proposed Development.

16.11.3 Waste

There are no transboundary effects on waste as a result of the Proposed Development.

16.12 Summary

Table 16-39 presents a summary of the potential impacts, mitigation measures and residual effects in respect to Material Assets Non-Agriculture.

Overall, it is concluded that there will be no significant effects arising from the Proposed Development during the construction, operation, and maintenance phases other than where specified significant effects on individual land holdings are identified within the land take assessment tables provided in Appendix C16.01, however these are not considered significant effects with respect to the Proposed Development as a whole.

Table 16-39: Summary of Potential Environment Effects, Mitigation and Monitoring

Description of impact	Magnitude of impact	Sensitivity of receptor	Significance of effect	Mitigation measures	Residual effect	Proposed monitoring
Non-Agricultural Properties	Varied	Varied	Not significant from a national, regional or county perspective. Varied significance from a local or individual perspective (Imperceptible to Profound – See Appendix C16.01)	Measures incorporated within the design proposal include inter alia reinstatement works; provision of new or altered access; provision of new boundary treatment; and provision for replacement wastewater treatment facilities, where such features are affected. Compensation will also be payable as per the CPO process where land take occurs. No additional mitigation. Mitigation measures with respect to noise, air quality, landscape and visual impact, traffic and water are addressed under the relevant chapters of this EIAR.	Not significant at a national, regional or county perspective. Some significant and profound effects on an individual level.	None
Disruption to Utilities	Negligible	Medium	Slight adverse	Construction phase: Prior engagement with all utility providers. Clearly marking all services. All work carried out in the vicinity of services will be undertaken in accordance with recommended code of practices including the current HSA 'Code of Practice for Avoiding Danger from Underground Services' and the 'Code of Practice for Avoiding Danger from OH Electricity Lines'.	None	None
Waste	Low	Low	Slight adverse	Construction phase: A Construction and Demolition Resource and Waste Management Plan has been prepared (see Appendix C16.03) and will be implemented by the Contractor and be in operation for the duration of the Proposed Development. Source segregation of waste. Temporarily stockpiling of waste for a period not exceeding six months.	None	During the construction phase of the Proposed Development, records of all waste and associated documentation shall be kept by the Site Environmental Manager as per the EOP.

Description of impact	Magnitude of impact	Sensitivity of receptor	Significance of effect	Mitigation measures	Residual effect	Proposed monitoring
				Wastewaters from temporary toilets will be either discharged to the existing sewerage network or tankered off-site for disposal. Waste classification testing shall be undertaken. All waste shall have a suitable waste classification in line with the LoW. Hazardous waste shall be appropriately stored and disposed of. WAC testing for waste destined for landfill. Waste hauliers shall hold a waste collection permit. Waste will only be taken to a suitably authorised waste management facility. A TFS will be in place for exported waste.		

16.13 References

Commission of the European Communities (2010) *Guidance on classification of waste according to EXC-Stat categories.*

DHLGH (2018) *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessmen*t

Department of the Environment, Climate and Communications (2019) *Waste Hierarchy.*

Department of the Environment, Community and Local Government (2012) *A Resource Opportunity - Waste Management Policy in Ireland.*

DHPLG (2018) *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment, Department of Housing, Planning and Local Government.*

EPA (2020) *Construction & Demolition Waste Statistics for Ireland.*

EPA (2021), *Best Practice Guidelines on the Preparation of Resource & Waste Management Plans for Construction and Demolition Projects.*

EPA (2022) *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.*

EPA (2018) *Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous*

IEMA (2020) *Guide to: Materials and Waste in Environmental Impact Assessment.*

Irish Water (2019), *Letterkenny Annual Environmental Report 2019.*

NRA (2007) *Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan*

TII (2024) *Population and Human Health Assessment of Proposed National Roads – Standard (PE-ENV-01108).*

TII (2017), *The Management of Waste from National Roads Construction Projects*, TII Publications.

TII (2011), *Specification for Road Works Series 100 – Preliminaries*, TII Publications

TII (2010), *Specification for Road Works Series 200 - Site Clearance*, TII Publications.