14 WASTE MANAGEMENT

14.1 Introduction

This EIAR Addendum includes the response to Meath County Council's (MCC) decision to request Further Information dated 29th October 2024 in respect to MCC Reg. Ref. 24/60709. In the interest of clarity and transparency, the additional information shown as tracked changes to this document including any deletions arising from the changes made on foot of the further information request.

This chapter of the Environmental Impact Assessment Report (EIAR) provides an assessment of the potential impacts of the Proposed Development on Waste Management.

14.1.1 Author Information and Competency

This chapter was prepared by Laura Griffin, Environmental Consultant, Enviroguide. Laura has a Master of Science (Hons) in Climate Change from Maynooth University and a Bachelor of Arts (Hons) in English and Geography from Maynooth University. Laura has worked as an Environmental Consultant with Enviroguide since 2021 and has experience preparing Environmental Impact Assessment (EIA) Screening Reports, Air Quality and Climate, Noise and Vibration, and Material Assets (Waste and Utilities) of EIARs.

This chapter has been reviewed and approved by Harry Parker, Technical Director and EIA Lead at Enviroguide. Harry is an environmental consultant with 16 years' experience in consultancy, specialising in EIAs for large-scale residential and commercial developments, working closely with a range of developers, planning consultants and architects within the public and private sector.

14.2 Assessment Methodology

Regulations and Guidance

The methodology adopted for the assessment will take cognisance of relevant guidelines, in particular the following:

- Environmental Protection Agency (EPA) (2022) Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR);
- EPA (2021) Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects;
- Waste Framework Directive (Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste) as amended by Directive (EU) 2018/851;
- European Union (Waste Directive) Regulations 2020, S.I. No. 323 of 202;
- Waste Management Acts 1996 (as amended);
- Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021; and
- Meath County Development Plan 2021-2027.

The scope of the work undertaken for the impact assessment will include desk-based study of waste management services within the defined study area. The desk study involve collecting all the relevant data for the Proposed Development site and surrounding area including published information and details pertaining to the Proposed Development provided by the Applicant and design team. Information on waste management in the vicinity of the Site of the Proposed Development will be assembled by reviewing the following information:

- Construction Environmental Management Plan (Enviroguide, 2024);
- Resource Waste Management Plan (Enviroguide, 2024)
- Operational Waste Management Plan (Enviroguide, 2024)
- http://mywaste.ie

14.3 Prediction and Assessment of Potential Impacts

Impacts will vary in quality from negative, to neutral or positive. The effects of impacts will vary in significance on the receiving environment. Effects will also vary in duration. The terminology and methodology used for assessing the 'impact' significance and the corresponding 'effect' throughout this chapter is described in Table 14-1.

QUALITY OF EFFECTS / IMPACTS	***DEFINITION***
Negative	***A change which reduces the quality of the environment.***
Neutral	***No effects or effects that are imperceptible, within the normal bounds of variation or within the margin of forecasting error.***
Positive	***A change that improves the quality of the environment.***
SIGNIFICANCE OF EFFECTS / IMPACTS	***DEFINITION***
Imperceptible	***An effect capable of measurement but without significant consequences.***
Not Significant	***An effect which causes noticeable changes in the character of the environment but without significant consequences.***
Slight	***An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.***
Moderate	***An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.***
Significant	***An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.***
Very Significant	***An effect which, by its character, magnitude, duration or intensity significantly alters a sensitive aspect of the environment.***
Profound	***An effect which obliterates sensitive characteristics.***
DURATION OF EFFECTS / IMPACTS	***DEFINITION***
Momentary	***Effects lasting from seconds to minutes***
Brief	***Effects lasting less than a day***
Temporary	***Effects lasting one year or less***
Short-term	***Effects lasting one to seven years***
Medium-term	***Effects lasting seven to fifteen years***
Long-term	***Effects lasting fifteen to sixty years***

Table 14.1:

Permanent	***Effects lasting over sixty years***
Reversible	***Effects that can be undone, for example through remediation or restoration***

Terminology Used to Assess the Duration of Potential Impacts and Effects (EPA, 2022)

14.4 Local and National Waste Action Plans

The National Waste Management Plan for a Circular Economy (NWMPCE) 2024 -2030, sets out the framework for the prevention and management of waste across Ireland. This document is a statutory document underpinned by national and EU waste legislation, and reflects the targets set out for C&D waste in the Waste Framework Directive (WFD).

The strategic vision of the Plan is to rethink the approach to managing waste, and to move towards a 'circular economy' approach where resources are reused or recycled as much as possible, and the overall generation of waste is minimised.
In order to achieve this vision, the Plan has set out a number of specific and measurable performance targets in relation to Construction and Demolition waste:

- Achieve a 2% reduction per annum is proposed for total construction and demolition waste to achieve a cumulative 12% reduction by 2030 (Baseline is 9 Million tonnes); and
- Achieve 70% of C&D waste sent for reuse, recycling and other recovery of construction and demolition waste (excluding natural soils and stones and hazardous wastes).

The Plan aims to "prioritise waste prevention and circularity in the construction and demolition sector to reduce the resources that need to be captured as waste".

In order to achieve the objectives set out in NWMPCE, it is imperative that robust resource and waste management plans are developed for and designed into the pre-construction, construction and operational phases of the Proposed Development.

14.5 Article 27 of the European Communities (Waste Directive) Regulations 2011

Under the Under Article 27 of the European Communities (Waste Directive) Regulations 2011 (SI No. 126 of 2011) as amended (referred to hereafter as Article 27), uncontaminated soil and stone free from anthropogenic contamination which is excavated during the Construction Phase of a development can be considered a by-product and not a waste, if (a) further beneficial use of the material is certain, (b) it can be used directly without any further processing, (c) it is produced as an integral part of the development works and (d) the use is lawful and will not have any adverse environmental or human health impacts (EPA, 2019). For Article 27 to apply, the beneficial use mentioned in point (a) above must be identified for the entirety of the excavated soil from the Proposed Development prior to its production, with that use taking place within a definite timeframe, for it to be regarded as certain.

14.6 The Existing and Receiving Environment (Baseline Situation)

The site is generally bounded by y Station Road (L2228) to the south, Dunboyne Train Station and the Iarnród Éireann rail line to the west, cluster of detached houses to the southeast, greenfield lands to north and east. The application includes also two (2) roundabouts on the R147 (Old Navan Road).

14.7 Characteristics of the Proposed Development

Chapter 2 of this EIAR includes a detailed description of the Proposed Development.

The waste management objectives for the Proposed Development are as follows, and will facilitate material reuse and recycling, where possible, and seek to divert waste from landfill:

- Prevention: The Contractor will prevent and minimise waste generation where possible by ensuring large surpluses of construction materials are not delivered to the Site through coordination with the suppliers, operating a 'just-in-time' delivery scheme and ensuring sub-contractors conform to the Construction Environmental Management Plan;
- Reuse: Reusing wastes and surplus materials where feasible and in as many high value uses as possible;
- Recycle: Recycling wastes where possible such as introducing on-site crushers to produce waste derived aggregates which, subject to appropriate testing and approvals, may be re-used in the Proposed Development; and
- Disposal: Where disposal of waste is unavoidable, this will be undertaken in accordance with the Waste Management Act 1996, as amended.

14.8 Potential Impacts of the Proposed Development

14.8.1 Construction Phase

The Construction Phase will give rise to the requirement to remove and bring quantities of various materials to and from the site. Construction and excavation related wastes will be created during the Construction Phase. This has the potential to impact on the local waste management network.

A Resource Waste Management Plan (RWMP) (Enviroguide, 2024) has been prepared for the Construction Phase of the Proposed Development and is included in Volume 3 – Appendices.

The Contractor will have the responsibility to record resource and waste management at the site in line with the Resource and Waste Management Plan (RWMP). Some of the principal duties and responsibilities of this role include:

- Report to Project Manager on the management of resources and waste at the site.
- Identify all destinations for resources taken off-site.
- Address end-of-waste and by-product notifications with the EPA, where applicable.
- Maintain full records of all resources (both wastes and other resources) for the duration of the project
- Delegate responsibility to sub-contractors, where necessary.
- Coordinate with suppliers, service providers and sub-contractors.
- Prioritise waste prevention and resource salvage.

It is intended, where possible, to maximise the reuse of clean/non-hazardous excavation material following appropriate material testing and risk assessment to ensure the material is suitable for its proposed end use, to avoid importing raw materials. Excavated soil and stone pending reuse in the Proposed Development will be temporarily stockpiled in designated areas onsite during the construction phase.

Offsite removal of surplus clean soil and topsoil will be undertaken in accordance with the RWMP and relevant waste management legislation. The site management team will keep records of the removal and certification on file on site. The offsite re-use of material will be prioritised to minimise the potential loss of valuable good quality soil and subsoil to landfill as a waste. The re-use of soil offsite will be undertaken in accordance with all statutory requirements and obligations including where appropriate re-use as by-product

in accordance with Article 27. Any surplus soil not suitable for re-use as a by-product and other waste materials arising from the Construction Phase will be removed offsite by an authorised contractor and sent to the appropriately authorised (licensed/permitted) receiving waste facilities. As only authorised facilities will be used, the potential impacts at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures.

The Contractor will vet the source of aggregate, fill material and topsoil imported to the Site in order to ensure that it is of a reputable origin and that it is "clean" (i.e., it will not contaminate the environment). The Contractor and/or Meath County Council will implement procurement procedures to ensure that aggregate, fill material and topsoil are acquired from reputable sources with suitable environmental management systems as well as regulatory and legal compliance.

As a result of the further information request from Meath County Council, it is proposed that the archaeological sites located within the development shall be buried with 500mm of site-won fill. Subject to the final stock of excavated material, the fill shall comprise of site-won topsoil or alternatively 300mm of site-won topsoil underlain by 200mm of site-won subsoil. All fill proposed to be reused shall be tested and classified to comply with CC-GSW-00100 and CC-SPW-00600.

The waste materials generated during the construction phase will be stored in suitably size receptables and transferred offsite for appropriate processing, recycling and recovery. Waste materials generated from the Construction Phase that are unsuitable for reuse or recovery will be separately collected. Disposal of construction generated wastes will be considered a last resort and only after recycling or recovery options have been ruled out. Waste will be collected as appropriate by suitably qualified and permitted nominated waste management contractors.

It is not envisaged that there will be any hazardous waste generated throughout the construction works however, in the event that hazardous soil, or historically deposited waste is encountered during the site bulk excavation phase, the contractor will notify MCC and provide a Hazardous / Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant mitigation, destination for disposal/treatment, in addition to information on the authorised waste collector(s). Only authorised facilities will be used and as a result of this, the potential impacts at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures.

Waste will also be generated from construction workers e.g., organic/food waste, dry mixed recyclables (wastepaper, newspaper, plastic bottles, packaging, aluminium cans, tins and cartons), mixed non-recyclables and potentially sewage sludge from temporary welfare facilities provided onsite during the Construction Phase. Waste printer/toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated infrequently from site offices. Office and canteen waste, including food waste, will be stored in wheelie bins on site and it will be collected by an appropriately authorised waste collector. All wastes generated on site will be sent for recycling, recovery, or disposal to a suitably licensed or permitted waste facility.

The potential impact from the construction phase on waste recovery and disposal is likely to be short-term, negative and minor in nature.

14.8.2 Operational Phase

The operational phase of the Proposed Development will result in an increase in the production of municipal waste in the region and will increase demand on waste collectors and treatment facilities, however, as the surrounding area is urban in nature, waste

collection is commonplace. Anticipated wastes arising from the day-to-day operations at the Proposed Development are summarised in Table 14.2.

WASTE DESCRIPTION	***LISTOF WASTE CODES***
Mixed Municipal Waste	20 03 01
Dry Mixed Recyclables	20 03 01
Biodegradable Kitchen Waste	20 01 08
Glass	20 01 02
Bulky wastes	20 03 07
Waste electrical and electronic equipment*	20 01 35* 21 01 36
Batteries and accumulators*	20 01 33* 20 01 34
Textiles	20 01 11
Fluorescent tubes and other mercury containing waste*	20 01 21
Chemicals (solvents, pesticides, paints & adhesives, detergents, etc.)*	20 01 13/19/27-28/29-30
Plastic	20 01 39
Metals	20 01 40
Paper and Cardboard	20 01 01

**Individual waste type may contain hazardous materials*

Table 14.2: **Typical Waste Types and Generated List of Waste (LoW) Codes**

Municipal waste is made up of household waste and commercial waste that is compositionally comparable to household waste. It includes residual, recyclables, organic, bulky, and waste electrical and electronic equipment. An Operational Waste Management Plan (OWMP) has been prepared by Enviroguide (2024) and has been submitted with this planning application.

The OWMP has been prepared to ensure that the management of waste during the operational phase of the Proposed Development is undertaken in accordance with current legal and industry standards including the 'Waste Management Act 1996, as amended', and associated Regulations including, 'Protection of the Environment Act 2003 as amended', 'Litter Pollution Act 1997 as amended', the 'National Waste Management Plan for a Circular Economy 2024-2030' and 'Meath County Council bye-laws' (hereinafter referred to as 'the bye-laws').

The waste strategy presented in the Operational Waste Management Plan which sets out how waste storage and management has been designed in accordance with legal requirements, policies and good management guidelines.

Implementation of the Operational Waste Management Plan will ensure that a high level of recycling, reuse, and recover at the Proposed Development during the operational

phase. The potential impact from the operational phase on municipal waste disposal is likely to be long term, negative and moderate.

14.8.3 Potential Cumulative Impacts

Cumulative Impacts can be defined as "*impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project*". Effects which are caused by the interaction of effects, or by associated or off-site projects, are classed as indirect effects. Cumulative effects are often indirect, arising from the accumulation of different effects that are individually minor.

A review of other off-site developments and proposed developments listed in Chapter 16 was completed as part of this assessment.

With regard to other developments under construction and proposed in the in the vicinity of the site of the Proposed Development, there will be a greater demand on existing local waste management services and on regional waste acceptance facilities.

The capacity of waste collection companies and waste management facilities in County Meath have been designed with forward planning and expansion in mind to cater for a growing population. Existing waste collections currently take place in the local area and during the operational phase, the Proposed Development will be added to an existing collection route. The likely effect will be neutral and not significant on waste management facilities in the area in the long-term.

14.9 Avoidance, Remedial and Mitigation Measures

14.9.1 Construction Phase

The following mitigation measures are recommended for the Construction Phase of the Proposed Development regarding Waste Management:

- Waste materials will be separated at source and will follow the RWMP.
- Prior to the commencement of the Construction Phase detailed calculations of the quantities of topsoil, subsoil and green waste will be prepared, and soils will be tested to confirm they are clean, inert or non-hazardous;
- Beneficial use must be identified for the entirety of the excavated soil from the Proposed Development prior to its production for the excavated soil and stone to be considered as a by-product under Article 27 of the European Communities (Waste Directive) Regulations, 2011;
- A suitably competent and fully permitted waste management company will be employed to manage waste arising for the Construction Phase. The appointed waste contractor must have the relevant authorisations for the collection and transport of waste materials, issued by the National Waste Collection Permit Office (NWCPO);
- Similarly, all waste materials will be transported to an appropriately authorised facility, which must have the relevant authorisations for the acceptance and treatment of the specific waste streams, i.e., a Certificate of Registration (COR) or a Waste Facility Permit (WFP) as granted by a Local Authority, or a Waste/Industrial Emission Licence as granted by the Environmental Protection Agency; and
- All waste quantities and types will be recorded and quantified, and records will be retained onsite for the duration of the construction phase.

These mitigation measures will ensure that the waste arising from the construction phase of the Proposed Development is dealt with in compliance with provisions of the Waste Management Act 1996, as amended, associated Regulations and Litter Pollution Act 1997,

and The National Waste Management Plan for a Circular Economy 2024-2030. The mitigation measures will also ensure optimum levels of waste reduction, reuse, recycling and recover are achieved and will promote more sustainable consumption of resources.

14.9.2 Operational Phase

As previously stated, an outlined Operational Waste Management Plan has been prepared by Enviroguide (2024) and is included in Volume 3 - Appendices of this EIAR. The mitigation measures outlined in the OWMP will be implemented in full and form part of the mitigation strategy for the site. Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the Proposed Development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus achieving the targets set out in The National Waste Management Plan for a Circular Economy 2024-2030.

14.9.3 'Do Nothing' Scenario

In the 'Do Nothing' scenario, the Proposed Development does not proceed and there would be no excavation, construction or operational waste generated at the site. There would, therefore, be no additional demand or loading on waste management infrastructure locally or nationally and thus there would be a neutral effect on the environment in terms of waste.

14.10 Residual Impacts

14.10.1 Construction Phase

The residual effects on waste management are considered to be minor, negative and short-term, due to:

- The prevention and mitigation measures proposed within this and other chapters of the EIAR;
- Compliance with national legislation and the allocation of adequate time and resources dedicated to efficient waste management practices; and
- Continued use of permitted/licensed waste haulers and facilities. Waste removed from the facility will be managed appropriately and will avoid environmental impacts or pollution. In addition, the correct management and storage of waste will avoid litter or pollution issues at the site.

14.10.2 Operational Phase

Waste materials will be generated on an ongoing basis during the operational phase; these will for the most part consist of municipal waste and recyclable materials. Careful management of these, including segregation at source, will help to ensure a high level of waste recycling, reuse, and recovery at the development. A certain proportion of operational waste will nevertheless need to be disposed of at landfill. Given the provision of appropriate facilities, and their correct use by residents, environmental impacts (e.g. litter, contamination of soil or water, etc.) arising from operational waste storage and removal are expected to be minimal. The use of suitably licensed waste contractors will ensure compliance with relevant legal requirements and appropriate off-site management of waste. With the implementation of the proposed operational waste management measures, the proposed development is not expected to have a significant environmental impact with respect to operational waste. The likely effect of the

operational phase on waste management will be neutral and imperceptible in the long-term.

14.11 Monitoring

14.11.1 Construction Phase

All waste transfer notes will be checked and filed in the environmental plan for regular review and monitoring.

- Signage on the site office/welfare bins to separate them as environmental/domestic waste bins; and
- Briefing for all sub-contractors via induction handouts.

14.11.2 Operational Phase

No operational phase monitoring is proposed.

14.12 Interactions

Waste management interacts with other environmental receptors as follows:

- Population and Human Health: The improper removal, handling and storage of hazardous waste could negatively impact on the health of construction workers. Potential impacts on population and human health are addressed in Chapter 5.
- Biodiversity: The improper handling and storage of waste during the Construction and Operational Phases could negatively impact on biodiversity. Potential impacts on biodiversity are addressed in Chapter 8 (Biodiversity).
- Land, Soils, Geology and Hydrogeology: Improper handling and segregation of hazardous or contaminated wastes could lead to the contamination of soil and stones excavated from the Site. Potential impacts on land and soils are addressed in Chapter 6.
- Traffic and Transportation: Waste collection activities at the Proposed Development have the potential to impact upon traffic movements in the Blessington area. Potential impacts on traffic are addressed in Chapter 13.

14.13 Difficulties Found

No difficulties have been encountered while compiling this Chapter.

14.14 References

Department of Communications, Climate Action and Environment (DCCAE) (2021) A Waste Action Plan for a Circular Economy – Ireland's National Waste Policy 2020-2025

Environmental Protection Agency, 2022, Guidelines on the Information to Be Contained in Environmental Impact Assessment Reports.

Environmental Protection Agency, 2021, Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects

Environmental Protection Agency, 2019, Guidance on Soil and Stone By-products in the context of article 27 of the European Communities (Waste Directive) Regulations 2011, Version 3.

Environmental Protection Agency, 2003, Advice Notes on Current Practice in the preparation of Environmental Impact Statements.

Environmental Protection Agency, 2002, Guidelines on the information to be contained in Environmental Impact Statements.

Litter Pollution Act 1997.

Meath County Council Litter Management Plan 2022 – 2024.

The National Waste Management Plan for a Circular Economy 2024-2030.

Waste Framework Directive (Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste) as amended by Directive (EU) 2018/851.

Waste Management Acts 1996-2011 (as amended).

15 MATERIAL ASSETS

15.1 Introduction

This EIAR Addendum includes the response to Meath County Council's (MCC) decision to request Further Information dated 29th October 2024 in respect to MCC Reg. Ref. 24/60709. In the interest of clarity and transparency, the additional information shown as tracked changes to this document including any deletions arising from the changes made on foot of the further information request.

This chapter prepared evaluates the protentional impacts, from the proposed development of Material Assets as defined in the EPA Guidelines 'Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022), Advice Notes Draft Advice Notes for preparing Environmental Impact Statements (EPA, 2015), and European Commission Guidance on Environmental Impact Assessment of Projects: Guidance on the Preparation of the Environmental Impact Assessment Report (2017)'.

This chapter will evaluate the following economic assets of the site and environs:

- Materials Assets of Natural Origin
  - Agriculture
  - Natural resources
- Material Assets of Human Origin
  - Local settlement
  - Property Prices
  - Gas Supply
  - Electricity supply
  - Telecommunications
  - Transport
  - Water supply and sewerage
  - Municipal Waste
  - Tourism

Where relevant several of these assets have been addressed in other chapters within this EIAR and therefore, they are not discussed in detail in this chapter. References are provided to these other chapters where appropriate.

15.2 Expertise

This chapter of EIAR has been prepared by Katarina Kanevova, planner, who completed her Master's Degree in Spatial Planning at Slovak University of Technology in Bratislava, Slovakia in 2010. Following her studies she worked in forward planning, specialised on land-use planning projects in Slovakia. Her main focus after moving to Ireland is on residential development. Katarina is a Corporate Member of the Irish Planning Institute.

15.3 Material Assets of Natural Origins

15.3.1 Agriculture

The proposed development site has most recently been used for agriculture activities; however, the lands upon which the proposed development is to be located are zoned as residential. It is not anticipated that the operation of the proposed development will have

any significant impact on agriculture in the wider environs of the site. Emissions from the proposed developments with the potential to impact on local agriculture are addressed in the respective EIAR chapters including Chapter 5: Population and Human Health, Chapter 6: Land, Soils, Geology and Hydrogeology, Chapter 7: Hydrology, Chapter 8: Biodiversity, Chapter 9: Air Quality & Climate and Chapter 10: Noise and Vibration.

15.3.2 Planting

Chapter 11 Landscape and Visual Impact report assesses trees on site and provides an analysis of any potential impact on the existing trees and hedgerows. The chapter also provides recommendations for remedial works, preservation and or removal of trees and hedgerows.

13.3.3 Use of Natural Resources (Energy/ Fuel)

During construction, fuel for construction related machinery will be one of the main resources used. Use of natural resources, especially water, will be kept to a minimum during the construction phase.

During the operational phase, there will be on-going resource requirements which will reflect the nature of the development. Refer Chapter 9: Air Quality and Climate for details on potential emissions from the proposed development.

15.4 Material Assets of Human Origins

15.4.1 Local Settlement

Dunboyne, located directly west of the site is the nearest significant settlement to the proposed development. The Dunboyne railway station is located directly to the east of the subject site. This application incorporates improved access points to this public transport node. Further details on the nature of local settlements are presented in Chapter 5: Population and Human Health.

15.4.1.1 Property Prices

The development will consist of the construction of ~~853~~ 810 residential units (~~398~~ 355 no. apartments, 112 no. duplexes, 343 no. houses), residential amenity space in Blocks A – C. Apartment blocks are proposed as 1-6 storeys, duplexes 3-4 storeys and houses 1-3 storeys. The residential units proposed are of exceptional quality with generous floor areas and private open space and a high-quality palette of materials and finishes.

The development consists of 3 key areas: the Gateway Hub to the south of the site adjacent to the Dunboyne Station and Station Road with high residential density, an area of duplex development, houses up to 3 storeys and a focal point with apartment block to the north to enhance frontage along the distributor road and to enclose the subject site, an area of traditional house development to the centre of the site to reflect on existing residential development to the west.

The delivery of non-residential uses of café (c.196sqm) with associated outdoor seating area, medical unit 1 (197 sqm), retail unit 2 (~~217~~ 199 sqm), retail unit 3 (~~170~~ 188 sqm), community room (52 sqm) on the ground floor of Blocks A along with a stand-alone creche (c. 394 sqm) will provide an active urban frontage of the proposed high density Gateway Hub adjacent to Dunboyne Station and Station Road. The second creche (c. 400 sqm) forms a part of Block C and is envisaged to serve the northern part of the development.

The proposal delivers a portion of the Dunboyne Eastern Distributor Road from Station Road to bridge embankments including relocation of the existing station car park access.

The overall site is bounded by the railway line with Dunboyne Station to the west, Station Road to the south and predominantly agricultural lands to the east and north.

It is anticipated that the proposed development will have no negative impact on property prices. The commencement of the construction of the Dunboyne Eastern Distributor Road road will facilitate further expansion of Dunboyne in the future. A proposed portion of the Eastern Distributor Road will contribute towards a construction of the full length of the distributor road which allow the removal of through traffic from the centre of the village hence improving the public realm experience within the village during peak commuting hours.

15.4.2 Gas Supply

There is an existing gas pipeline located within the surrounding road network. However, gas supply is not being proposed for this development.

15.4.3 Electricity Supply

The proposed development will require an electrical connection to the local network. ESB services will connect to the existing 10kV ESB MV network which is currently available in the area and supply the Residential development. A system of Modular unit substations will be installed to provide power to the development.

Electricity services will be brought from the existing MV network via underground ducting to the unit substations to be located on the site.

15.4.4 Telecom

The subject site is located in a well developed suburban area with excellent telecommunication links. It has been confirmed that Eir, Virgin and Sky can all provide a 500Mb service to the proposed development. Virgin have a fibre backbone in the area and this can be expended on to the subject site. Siro, an open platform fibre network is also available. This is a joint venture between Vodafone and ESB and is distributed in tandem with ESB Networks ducting system. Similar to other providers this will bring a fibre connection into the house but this platform is open to other service providers.

15.4.5 Transport

Chapter 13: Traffic and Transportation examines the traffic implications associated with the proposed development, in terms of integration with existing traffic in the area. The chapter presents a detailed review of the proposed development on the existing road network, through the operational assessment of the New distributor road in the vicinity of the development site.

It also examines the proposed development's vehicular access arrangements, site layout and facilities for pedestrians and cyclists.

15.4.6 Water Resources

Chapter 7: Hydrology deals with water resources associated with the proposed development.

According to the development's potable water demand, it has been calculated that the predicted peak water demand is 24.90 l/sec.

There is an existing 200mm watermain that runs along Station Road. There is no existing watermain infrastructure within the subject site. A watermain connection for the railway station is present within the existing station access road.

A pre-connection enquiry has been submitted to Irish Water for the subject site and a confirmation of feasibility has been received in response. Furthermore, a Statement of Design Acceptance has been received from Irish Water.

15.4.7 Surface Water Drainage

There is an existing 300mm-750mm surface water sewer running along the entire length of the western boundary of the subject site. At the southwest corner of the site this surface water sewer crosses into the Dunboyne Railway Station lands where it then heads west under the railway tracks. This pipe shall be diverted within the subject lands to flow eastwards via a piped culvert where it is discharged at the River Tolka as directed by S247 comments.

As referred to above, there are a number of dry channels crossing the development site which provide drainage for the agricultural purposed of the land. There is also an existing culvert to the northwest of the site under the railway line which connects into one of these ditches. As part of the proposed development works the ditch crossing the track will be culverted eastwards to the River Tolka while the remaining ditches will be made redundant.

The site has been divided into 13 sub-catchments, each surface water sub-catchment will collect runoff via a combination of SuDS features and traditional piped connections prior to discharge to one of the proposed attenuation storage systems. After attenuation, the surface water is released at a controlled rate via a Hydrobrake manhole or similar approved to a discharge point on an existing surface water sewer or a receiving existing watercourse. As requested by MCC the majority of the site will discharge to the east, towards the Tolka, with a small portion of the site in the south west corner of the development unable to outfall to the east given the site levels. It is proposed for this sub-catchment to discharge to the existing surface water attenuation system within the Dunboyne Rail Station. The run-off directed to the existing network shall be equivalent to the drained area of the removed access road in order to utilise the existing attenuation system.

15.4.8 Sewerage

Chapter 7: Hydrology deals process and foul effluent associated with the proposed developments.

There is an existing 450mm diameter foul sewer which traverses the western lands outside of the subject site from Navan Road to the railway line before heading below the railways tracks and connecting into an existing 300mm/450mm foul sewer which flows south along the length of the western boundary of the development. This pipe receives

foul sewer flows from the existing development to the west of the rail line through several rail crossings.

According to the Irish Water Guidelines, it has been calculated that the predicted peak will be 26.39 l/sec, however, the peak flow using the EN752 method in MICRODRAINAGE was also calculated. The pipes have been sized to accommodate the larger value. For more details we refer to Chapter 7 and Engineering Services Report prepared by DBFL.

The foul infrastructure for the development will be a standalone gravity sewer system, divided into the catchments. Each housing unit will be provided with an individual connection to a new sewer located under the development internal access roads. Foul sewage in apartment blocks will be drained on separate systems via 150mm diameter pipes. The new sewer within the development will be 225mm in diameter unless noted otherwise.

Any surface water from the undercroft car parks in the proposed blocks, generated by incidental spillage only would drain through an underground system of collector pipes, gullies and ACO drains to collect water which will drain through a petrol interceptor prior to discharging into the gravity foul drainage system for the site in accordance with the requirements of the Greater Dublin Strategic Drainage Study (GDSDS).

A pre-connection enquiry has been submitted to Irish Water and a confirmation of feasibility has been received in response. Furthermore, a Statement of Design Acceptance has been received from Irish Water.

15.4.8 Municipal Waste

The construction phase of the proposed development works will give rise to the requirement to remove or to bring on to the site significant quantities of construction materials.

Chapter 14: Waste Management addresses various measures which ensure that the waste arising at the development site is effectively manged to maximise recycling of construction waste, and to minimise the environment impact of construction waste.

All these measures are in compliance with the provisions of the Waste Management Act 1996 (as amended), the litter Act of 1997, and the Eastern-Midlands Region (EMR) Waste management Plan 2015-2021, achieving optimum levels of waste reduction, re-use and recycling.

The future development will increase demand on municipal waste services. The potential impact from the operational phase of the future development on municipal waste disposal is likely to be long term and moderate.

15.4.9 Tourism

The proposed developments are located in agricultural lands. In terms of tourism, the village is served by one hotel, Dunboyne Castle Hotel, which is located 1km to the west of the site. As such, there will be minimal impact on this hotel during the construction phase. It is noted that this hotel is accessible from multiple other roads. In order to reduce the negative impact various mitigation measures have been addressed in Chapter 10.

During the operation phase of the development, this hotel will be unaffected by the scheme.

15.5 Mitigation Measures

- Chapter 11: The layout of the proposed development will require the removal of 10 No. individual trees, two areas of scrub and approximately 1,810 lin. mc.1,810 of hedge sections to facilitate the proposed development application. The hedges ro be removed are made up predominantly of Hawthorn with some Elder and Blackthorn with an undergrowth of Bramble and Dog Rose.

  Tree and hedgerow removal is to be mitigated against with new plantings as proposed in the landscape masterplan. Tree sizes will range from whips to semi-mature sized trees, and a substantial proportion of native species in the planting mix. (Refer to Tree Survey and Arboricultural Impact Assessment and drawings by the Tree File, and Landscape Masterplan and landscape planting specification by KFLA)

- As outlined mitigation measures in Chapter 12: Archaeological, Architectural and Cultural Heritage is carried out, then there will be no significant negative residual impacts on the archaeological, architectural or cultural heritage resource.

- Chapter 10: Noise & Vibration deals with a schedule of mitigation measures that has been proposed for both the construction and operational phases to reduce, where necessary, the outward noise and vibration from the development.

- Chapter 9: Air Quality and Climate deals with appropriate mitigation measures to prevent fugitive dust emissions which will ensure the prevention of significant emissions during the construction stage. These measures have been incorporated into the overall Construction Environmental Management Plan (CEMP) prepared in respect of the proposed development.

  The proposed mitigation measures will ensure that a potential significant adverse effect will not occur, therefore, the residual effect will not be significant.

  In the operational phase, no significant adverse residual impacts are anticipated from the proposed scheme in the context of air quality and climate.

- Chapter 7: Hydrology outlines various mitigation measures which are included during construction will ensure that the potential impacts of the proposed development on water and the hydrogeological environment do not occur during the construction phase and that any residual impacts will be negligible.

  As the surface water drainage design for the residential development site has been carried out in accordance with the GDSDS, and SuDS methodologies are being implemented the surface water runoff from both the proposed LRD development will be reduced and so the risk of flooding to the downstream drainage networks will also be reduced.

15.6 Residual Assessment

The proposed development will not have any significant impact on material assets including, most notably, public utilities and natural resources. The overall predicted impact of the proposed developments can be classed as long term and negligible with respect to material assets. The proposed development has been designed for, and the infrastructure constructed for, a residential development of this nature.

16 CUMULATIVE IMPACTS

16.1 Introduction

This EIAR Addendum includes the response to Meath County Council's (MCC) decision to request Further Information dated 29th October 2024 in respect to MCC Reg. Ref. 24/60709. In the interest of clarity and transparency, the additional information shown as tracked changes to this document including any deletions arising from the changes made on foot of the further information request.

This chapter considers the cumulative impact of the proposed development with any future development, as far as is practically possible, on the site and the cumulative impacts with both planned and permitted developments in the immediate surrounding area. As described in chapter 2 Description of Development, the development will consist of a Large Scale Residential Development.

Cumulative impacts are the impacts that relate to the incremental/additive impacts of the planned development to historical, present, or foreseeable future actions within reason. Cumulative impacts generally arise through the following:

- Persistent additions or losses of the same material or resource,
- Compounding effects due to the coming together of two or more effects.

16.2 Methodology

Cumulative Impacts as relevant to the subject proposal have been assessed regarding the following relevant guidance, including but not limited to:

- EIA Directive (2011/92EU) as amended by EIA Directive (2014/52EU);
- Planning and Development Regulations 2001 (as amended);
- Guidelines for Planning Authorities and An Bord Pleanala on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, 2018);
- Guidelines on the Information to be included in Environmental Impact Assessment Reports (EPA 2022);
- Guidance on the Preparation of Environmental Impact Assessment Report (European Union 2017); and
- Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions, European Commission, 1999.
-

The EPA Guidelines (2022) define cumulative effects as '*The addition of many minor or insignificant effects, including effects of other projects, to create larger more significant effects.* The guidance clearly outlines that this assessment is required as while a single activity may have a minor impact, the impact may be more significant when combined with impacts from other projects, current or future. It could also be relevant to consider the potential environmental loadings that may arise from the development of lands in the vicinity of the subject project.

This chapter considers the potential for cumulative impacts of the development that may arise from the proposed development with any future development that related to the application as identified within Chapter 2 Description of Development and permitted development in the vicinity of the development site.

16.4 Receiving Environment

16.4.1 Existing Local Land Uses

The subject site is located on the eastern outskirt of Dunboyne to the east from a railway line.
The subject development site extends to approximately 21.9 ha (gross site area). The net developable area of c.15.74 ha excludes: the distributor road including temporary areas needed for a construction phase, engineering connections outside main development area, 10m wide Irish Rail exclusion zone, 2no. roundabouts on R147, existing wayleave along the western boundary.

The site consists of 2 separate areas: the main part of the site proposed for residential development including a section of the Eastern Distributor Road and 2no. roundabouts located on R147.

The future residential development with ancillary 2 no. retail units, medical unit, café, community room and 2no. creches is located to the north of Station Road (L2228) and to the east from a railway line on the north east outskirt of Dunboyne and is identified in Figure 3 below for the purposes of this report. The subject area is located dominantly in Townland Dunboyne with a small southern section of the Station Road junction in Townland Castle Farm. Furthermore, 2 no. roundabouts at Old Navan Road (R147) proposed for alterations are located in Townlands Clonee and Loughsallagh.

The majority of the site is greenfield in nature relatively flat, and in agricultural use. A residential property known as Mill Farm Cottage in the southwest corner of the subject site has been demolished recently. An access road to the Dunboyne Train Station is located at the southern end of the site. There are a number of trees and hedgerows in the northern portion of the site. The wider area is generally comprised of suburban residential developments, Dunboyne Train Station and agricultural/greenfield space.

The lands are bound by the Iarnród Éireann railway line which services the Western Commuter (Dublin to Sligo) Railway service and Dunboyne train station to the west. Station Road runs along the southern boundary of the site. Loughsallagh (residential area) is adjacent to the subject site to the south east and agricultural land to the east and north. The site is c 1 km from the town centre and directly adjacent to Dunboyne train station.

The site is a natural extension of Dunboyne Town and is close to a range of public transport and employment nodes in the locality. Dunboyne is well serviced by a range of retail and commercial services, as well as a number of educational and community facilities (schools, library, community centre, etc) within easy reach of the site. For more details on social infrastructure we refer to Social Infrastructure Statement which forms a part of this submission. A Social Infrastructure Statement forms a part of the planning application.

2no. roundabouts are located at R147 (Old Navan Road): roundabout at the junction of Station Road (L2228) and Old Navan Road (R147) in Townland Loughsallagh and roundabout at the entrance to Clonee Village on the R147, at the Ard Cluain apartment scheme and Dunboyne Tennis Club in Townland Clonee.

Aside from availing of the many amenities that Dunboyne to the southwest of the subject lands has to offer, the development site is proximate to enterprise and employment sites with potential for rapid growth on the east of M3.

The subject site is located c.8 kilometres north-west of Blanchardstown, c.15 kilometres north-west of Dublin City Centre and c.18 kilometres west of Dublin Airport.

The application site is well served by public transport and we note specifically that it meets the accessibility designation *'High Capacity Public Transport Node or Interchange'* as defined in the *Sustainable Residential Development and Compact Settlements Guidelines Planning for Authorities (January 2024)*. Notably, the site is located in proximity to existing public transport services at Dunboyne Station, which is along the commuter railway line included in DART+ West project to provide an efficient and high-capacity service to and from Dublin City Centre.

There is a number of bus services available on Station Road with a nearest bus stop located at the southern boundary of the site at Station Road.

The Meath County Development Plan 2021-2027 as agreed governs the zoning of the lands. The site features a number of zoning objectives as follows:

- *A2 "New Residential" – majority of the site*
- *A1 "Existing Residential"*
- *F1 "Open Space"*
- *G1 "Community Infrastructure"*
- *TU "Transport and Utilities"*
- *RU "Rural Area" – lands where 2 no. roundabouts included in the proposal are located*

An indicative route for the Easter Distributor Road is also shown as an objective within the Meath County Development Plan 2021-2027. This can be seen below.

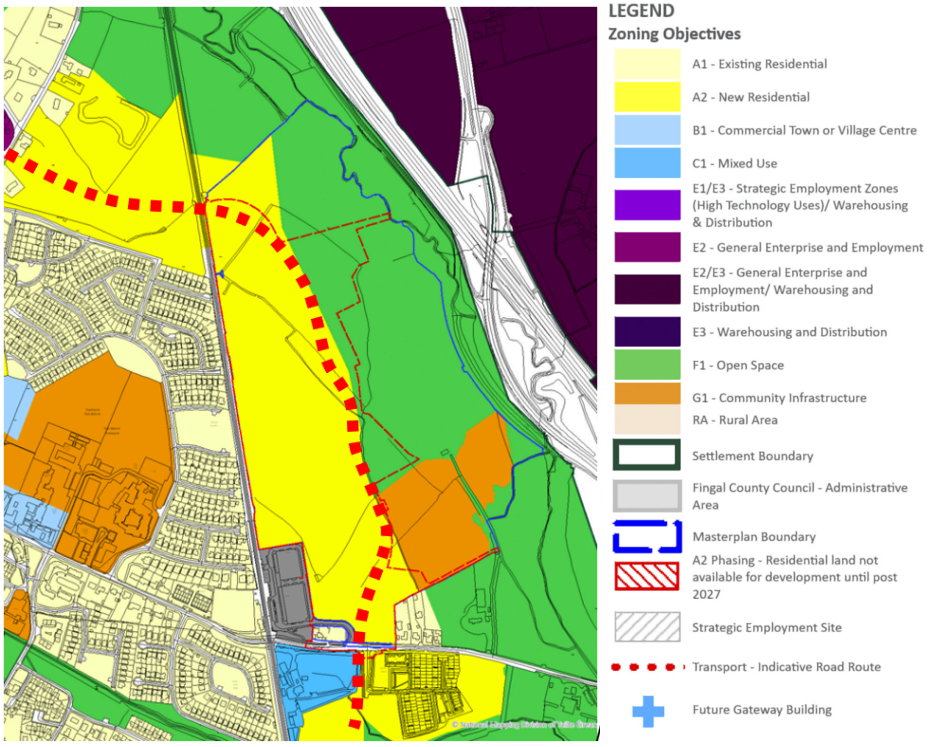

Figure 16.1 – Overview of Surrounding Land Uses

The residential zoning A2 extends upwards to the north and lands to the west. These lands have been earmarked by the applicant for future applications for residential development.

Permitted developments in the immediate surrounding area which have the potential for cumulative impacts with the proposed development within the immediate vicinity of the site are as follows:

RA180561 Castle Farm Development, Dunboyne
The site is located to the south of the entrance to the subject site. The applicant sought permission for the construction of 99 dwellings, apartments, duplex units, detached, semi-detached and terraced houses. There are also proposals for car parking spaces, a 117 sqm creche and open space.

Part 8 P8/22022 - Dunboyne Link Road - Dunboyne Business Park connection to the R157
Permission was granted in April 2023 for a development of a link road between Dunboyne Business Park the R157, Dunboyne, Co. Meath which forms a part of a Dunboyne Eastern Distributor Road.

LRD 23849 Castlefarm (Oakfield), Dunboyne
Permission GRANTED by MCC on 25th October 2023. The site is located further to the south of the entrance to the subject site. The applicant south 10-years permission for a Large-Scale Residential Development comprising of 716no. dwellings and a creche. The application also includes provision of 470m of new distributor road and alternations to the junction of the southern distributor road and Station Road. Alterations are also proposed to 2 no. roundabouts on the R147 (Old Navan Road) including enlarging the roundabout at the junction of the R147 (Old Navan Road) and L2228 (Station Road) and, widening of approach roads of the roundabout (including adjustments to footpaths and revised road markings) at the junction of the R147 and R156 (including northbound slip road to M3); both with ancillary site development and landscape works and being in the townlands of Clonee and Loughsallagh, Dunboyne, Co. Meath.

Reg. Ref. 24/60063 Distributor Road/Railway Bridge Application – ~~FI requested on 22nd March 2024~~
A planning application has been lodged on behalf of a joint venture agreement between Carroll Estates and John Connaughton Ltd. This application will seek permission for the distributor road between Navan Road and Station Road including a railway bridge demarcated in the Development Plan that traverses both landholdings. The permission has been granted on 26 November 2024.

LRD 2460625 at lands at Old Navan Road
A live LRD application for lands at Old Navan Road, Dunboyne was lodged for the development of 171 no. units, creche, section of the Eastern Distributor Road and ancillary works. Decision is due on ~~07 October 2024~~ 14 February 2025.

2460468 – Castlefarm Phase 2
The application is sought for development, on a site located at Station Road, Dunboyne, Co. Meath, south and east of the existing Castle Farm residential development. The proposed development consists of 76 no. dwellings. Permission is also sought for a creche (c. 324sq.m) located on the ground floor of Block L, which will replace the creche permitted (under Ref. RA/180561) in the adjoining phase of the Castle Farm development. This application is not decided yet.

As part of this assessment of the cumulative impacts that could arise from the proposal in combination with other projects, account has been taken of relevant developments currently permitted, under construction and currently live within the planning system for the consideration of Meath County Council. Existing surrounding land uses have also been considered.

When reviewing existing and permitted development in the surrounding area, it was noted that there was a number of established constructed permissions, permissions for small alterations to single residential dwellings and extensions. As these permissions were relating to established developments surrounding the site, they have been considered to not have a significant impact in relation to the overall development at the subject site.

It is noted that all permitted projects in the vicinity of the site are subject to an appropriate level of environmental assessment or planning conditions which include measures intended to minimise the potential for environmental impacts in the area. Any new development proposed on the lands that follows the subject development should be subject to an appropriate level of environmental assessment that will take into consider the subject development on the lands.

16.5 Assessment of Potential Cumulative Impacts

16.5.1 Human Health and Population

The proposed development has been carefully designed to ensure that there are no significant effects on human health and population during the construction and operational phases, considering the surrounding land uses in the vicinity of the development site as well as the population in the relevant electoral divisions. It is considered that no significant effects will occur once appropriate mitigation measures are correctly implemented.

It is considered that the proposed development and any future envisioned residential development proximate to the site will have a positive short-term impact on the area during the construction phase. Short term employment is created in the area during the construction phase of a large residential development, which can have a short-term positive impact on the local economy.

The development proposed and any future development surrounding the site will be required to implement mitigation measures during the construction period such as noise management, traffic management and dust management etc, to ensure that the cumulative impacts of any development will not have a significant impact on human health.

It is considered that the proposed development, and any future development surrounding the site will have a long-term positive impact on Human Health and Population. Future residential developments on the A2 zoned lands to the north and west will significantly increase the population of Dunboyne and will have a positive impact on the local economy and possible job creation and business growth in the area.

It is considered that the impact on Human Health and population in the short term will be short term positive in terms of population and short-term negative in terms of human health. It is considered that the impact on Human Health and population in the long term will be long term positive in terms of human population and long term neutral in terms of environmental factors.

16.5.2 Land, Soils, Geology and Hydrogeology

Due to the lack of significant residual impacts from the development of the DEDR route that would affect the wider geological environment, there will be no significant cumulative impacts to land, soil and (hydro)geology resulting from this project, and other

local existing developments, projects and plans. All impacts on soils and geology relating to the proposed project will be localised and within the development footprint.

16.5.3 Hydrology

Construction Phase

The mitigation measures to be detailed and implemented by site specific Construction Environmental Management Plan (CEMP) and Surface Water Management Plan (SWMP) will be adhered to. The objective of these mitigation measures is to manage all existing surface water and construction waters at the site in such a way that the development will not have an adverse impact on the receiving surface water system. All waters which are managed on site will be pumped and discharged through an active management treatment train and under condition of a discharge licence. Potential temporary accidental releases present a residual potential impact which will contribute negatively to the cumulative impact on the receiving water system to a slight to moderate extent depending on the severity of the event.

Operational Phase

The proposed DEDR drainage and SuDS network will be fully engineered during the detailed design phase. As part of this process, the rate, velocity and inundation times of the drainage network under a 1 in 100 year (+ climate change) event will be modelled and the systems configured to achieve the stated permissible discharge rates are achievable. Initial modelling of this type has already been undertaken as part of the planning submission and is included within the appendices of the Engineering Services Report. The assessment will also include for and mitigate against the potential for excess runoff overtopping and circumventing the established drainage/suds and migrating as overland flows. The process is in line with guidance on advanced flood risk assessment.

Achieving this will equate to a beneficial impact in terms of hydrological response to rainfall and flood risk, therefore contributing to cumulative impact beneficially i.e. reducing impacts on and downstream of the site.

16.5.4 Biodiversity

The local policies and plans as detailed in Appendix I as part of Chapter 8 were revied and considered for possible in-combination effects with the Proposed Development. Each of these plans has undergone AA, and where potential for likely significant effects has been identified (e.g. in the case of the Meath County Development Plan), an NIS has been prepared which will not result in in-combination effects with the Proposed Development. The Meath County Development Plan 2021-2027 has directly addressed the protection of European sites and biodiversity through specific objectives. The above listed plans are not being relied upon to rule out potential significant effects on any KERs.

Based on the location of the Site in agricultural land on the outskirts of Dunboyne town and the nature and scale of the Proposed Development as a residential project, a 500m radius is deemed sufficient to capture any projects that could act in-combination with the Proposed Development to cause likely significant effects on European Sites. Developments located outside the 500m radius were also considered where deemed relevant or requested by Meath CoCo as part of the RFI.

It is noted that many of the developments within the vicinity of the Site of the Proposed Development are applications granted for small scale residential upgrades to private dwellings and are unlikely to contribute to any in-combination effects involving the Proposed Development.

The 'CE LRD' application is submitted concurrently with this Proposed Development application. Therefore, there is the potential for the construction phases of the distributor road, the CE LRD and the Proposed Development to overlap if planning is granted for all three projects at around the same time.

The combined construction phases will lead to combined impacts on the immediate area of the three sites; through loss of existing farmland habitats, increased noise and dust, and potentially surface water run-off to the Tolka and its tributaries to the east. It is not envisaged that the combined construction phases of each development would act cumulatively to cause any likely significant effects on any designated sites nearby or downstream.

All three applications will be accompanied by AA screenings, NIS and either EcIA or EIAR Biodiversity Chapters, to ensure that all potentially significant effects on ecological receptors are identified and assessed appropriately. All three developments overlap on the same land parcels and so their immediate effects are localised in the single area; agricultural fields to the west of the River Tolka. All three developments share the same impact pathway to downstream designated sites in Dublin Bay i.e., a ca. 20km hydrological connection via the River Tolka and its tributaries.

The combined construction phases of the two LRDs and the eastern distributor road will lead to combined impacts on the immediate area of the three sites; through loss of existing farmland habitats, increased noise and dust, and potentially surface water run-off to the Tolka and its tributaries to the east.

The construction activities that pose the highest risk of pollution to the Tolka will be the modification of three surface water outfalls to this River and its tributaries, due the immediate proximity of these new outfalls to the waterbodies. These are relatively minor and short-term interventions and therefore do not have the capacity to cause likely significant effects to designated sites located a considerable distance downstream. The dense overgrown nature of the flood plain and channels of the Naulswood Stream and River Tolka as they pass the lands containing the Site of the Proposed Development and the Distributor Road, would further filter and limit the potential for any pollutants or sediments to make their way to these waterbodies, with a significant natural vegetated buffer present in the form of the floodplain containing both channels.

However, in an abundance of caution the potential for cumulative impacts in the form of a combined reduction in water quality in Dublin Bay; as a result of a worst-case scenario pollution events at the Site and other unknown ongoing developments located along the route of the River Tolka between the Proposed Development and its outfall in Dublin Bay, have been considered. Any potential for cumulative impacts on downstream European sites (and other overlapping designated sites) are therefore addressed with the mitigation described in the NIS (Enviroguide, 2024c) that accompanies this application under separate cover.

The surface water management systems of all three applications will be linked, with surface waters generated along the distributor road and the two LRD sites managed onsite via their independent SuDS, before being directed west to the Naulswood Stream, the River Tolka and Bracetown Stream via the distributor road's drainage infrastructure, the existing drainage ditches and a new surface water connection for the Proposed Development. As such, the potential for likely significant effects on designated sites in Dublin Bay (ca. 20km downstream) due to Operational Phase surface waters discharging to the River Tolka system is deemed to be negligible.

16.5.5 Air Quality and Climate

Cumulative impacts can be defined as "*impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project*". Effects which are caused by the interaction of effects, or by associated or off-site projects,

are classed as indirect effects. Cumulative effects are often indirect, arising from the accumulation of different effects that are individually minor.

Cumulative air quality impacts have the potential to arise locally when construction activities associated with the Proposed Development take place at the same time as other developments in a specific location.

A review of other off-site developments and proposed developments (listed in Chapter 16 – Cumulative Impacts) was completed as part of this assessment.

The cumulative effects on the air quality and climate of the Proposed Development and other permitted or existing developments have been considered, in particular through the generation of air pollutants and GHG emissions.

The potential impacts on air quality and climate are assessed in Section 9.5.1 and it is considered that there are no other potential significant cumulative impacts associated with the Proposed Development and considered offsite permitted developments.

In terms of dust, no significant impacts are predicted; good construction practice, which incorporates the implementation of the identified mitigation measures, will be employed at the Proposed Development site. Due to the implementation of good construction practices at the Site of the Proposed Development and these offsite permitted developments, it is not anticipated that significant cumulative impacts will occur.

The dust and air quality mitigation measures outlined above will be applied throughout the construction phase of the proposed development and similar best practice mitigation measures are also required for the construction phase of other developments which will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality and climate associated with the construction phase of the proposed development are predicted to be short-term and slight.

MCC Ref. 238949 has been considered as part of the cumulative assessment. In terms of dust, should the construction phase of the Proposed Development coincide with the construction phase of Ref. 238949, there is the potential for cumulative dust emissions to impact nearby sensitive receptors. However, the dust and air quality mitigation measures outlined above will be applied throughout the construction phase of the Proposed Development and similar best practice mitigation measures are also required for the construction phase of other developments which will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality and climate associated with the construction phase of the proposed development are predicted to be short-term and slight.

Assessment of operational stage impacts on air quality involved traffic data which is inclusive of traffic associated with other existing and permitted developments, including MCC Ref. 238949, on the road networks surrounding the site both in current and future years. Therefore, cumulative impacts have been assessed in this regard and the impact on ambient air quality has been determined as insignificant.

It is considered that there are no other potential significant cumulative impacts associated with the Proposed Development and considered offsite permitted developments.

16.5.6 Noise and Vibration

The cumulative noise impact from the construction noise and operational noise has been predicted. In the event that the construction of the developments is phased there is the potential for both operational noise and construction noise impact. It is not predicted that this will have a significant impact provided the advice and guidance in this chapter is followed. The operational noise impact considers the cumulative impact from the proposed Carroll Estates site which includes traffic and plant noise sources. The cumulative impact considers noise from the operation of the new road. Given the location of the receivers and the guidance provided in the application for the Carroll Estates development it is not predicted that the developments will have a negative in combination noise impact for the operational phase.

With regard to noise impact and the in combination effects, an Acoustic Design Statement has been produced which outlines the acoustic mitigation measures for operational phase for both the Carroll Estates Site and this site to reduce the noise impact from the distributor road, aircraft noise, train noise and the existing roads. Please refer to Acoustic Design Statements:

WDA230212RP_B _01-Noise Impact Assessment (Dunboyne Distributor Road – Reference 2460063)
WDA231008RP_A_01 Acoustic Design Statement (Carroll Estates)
WDA231120RP_A_01 Acoustic Design Statement (JCL)

The existing operational noise of the development at the boundaries have been considered with the future operational noise levels. Taking into consideration the assessment outlined above, the predicted levels from the operational noise of the development, the existing noise levels and the distance from the development to the noise sensitive receptors it is not predicted that the development will have a significant impact on the receivers from operational noise.

16.5.7 Landscape and Visual Impact ~~– Awaiting Final Version~~

Cumulative impacts may arise from the proposed construction of the following planning applications :

Dunboyne Distributor Road
Planning Authority: Meath County Council
Applicant: Conncarr Developments
Planning Ref : 2460063
Decision: Pending

If this project were to proceed, there will be negative and moderate impacts locally in the short term from the day and night time use of the proposed distributor road in terms of noise from vehicular movement, road lighting and lights from vehicles using the new route. However, it is anticipated that these impacts will reduce to neutral and slight once this proposed development is in full use in the medium term.

Planning Authority: Meath County Council
Planning Ref : 23849
Applicant: Azra Property Company Limited
Decision: Granted with conditions

This is a 10 year permission for a large scale residential development to the south of the site at Castlefarm, Ruskin and Clonee. The proposed development is on a site of

approximately 16.92Ha overall and consists of 716no. dwellings in a mixture of terraced, semi-detached and detached houses, duplexes and apartments as follows:

517no. apartment units are accommodated in 8no.buildings of 4-7 storeys in height comprising:

10no. 1-bed apartments, 202no. 2-bed apartments and 24no. 3-bed apartments accommodated in 4no. 4-6 storey apartment blocks

55no. 1-bed apartments, 80no. 2-bed apartments and 12no. 3-bed apartments accommodated in 2no. 6-7 storey apartment blocks (Blocks Bl and B2);

36no. 1-bed apartments, 78no. 2-bed apartments and 20no. 3-bed apartments accommodated in 2no. 4-5 storey apartment blocks (Blocks Cl and C2)

If both projects were to proceed there will be cumulative impacts on the landscape and visual resource locally. The peri-urban nature of the landscape to the east of the railway line will continue to transition to a suburban residential neighbourhood on the north and south of Station Road.

There may be additional cumulative impacts in the future if additional developments are built adjacent to the proposed development.

16.5.8 Archaeology and Cultural Heritage

Construction Phase
All proposed and permitted developments within the study area of the proposed development have been reviewed. No cumulative effects upon the archaeological, architectural or cultural heritage resource have been identified. This is due to the fact that the recorded monuments within the development area will be preserved in-situ and the remaining archaeological sites will be preserved by record and no other effects are predicted (from other developments) on the identified archaeological and architectural heritage resource in the study area.

Operation Phase
No cumulative effects during operation are predicted upon the archaeological, architectural and cultural heritage resource.

Do-Nothing Impact
If the proposed development were not to proceed, there would be no cumulative effects on the archaeological, architectural heritage or cultural heritage resource.

16.5.9 Traffic and Transportation

Noise and Vibration - Construction Phase
The projected increase in heavy vehicle traffic during the construction stage may lead to a slight increase in noise and vibration levels along the adopted construction haul routes. However, such effects will be temporary in nature.

Quality of Effect: Negative
Significance of Effect: Slight

Noise and Vibration - Operational Phase

The proposed development will not result in any 'new' additional vehicle trips but facilitates a reassignment of baseline traffic around the town centre area. Accordingly a projected decrease or increase in vehicle traffic during the operational stage is predicted at a number of the junctions across the local road network. This may lead to a slight decrease or increase in noise levels during peak trip generation periods, however, implementation of the mitigation measures describes under section 2.7 will prevent and minimise the potential impacts of this interaction at the junction were a slight increase is projected.

Quality of Effect: Positive and Negative (depending upon specific network node)
Significance of Effect: Slight

Air Quality - Construction Phase

During the construction phase, construction traffic will contribute to increased traffic volumes with majority of construction vehicles being HGVs. This will impact negatively on the surrounding air quality. This will be short term in nature and will be managed by means of an effective Construction Environmental Management Plan (CEMP), which has been developed and is submitted alongside this application.

Quality of Effect: Negative
Significance of Effect: Imperceptible

Air Quality - Operational Phase

During the operational phase, the proposed development will reduce traffic volumes on the existing road network in he Town Centre which in turn will impact air quality in terms of reduced emissions. However, there will be an increase in traffic volumes along the proposed road corridor, particularly at the junction with Dunboyne Business Park. This will result in an impact on air quality in terms of increased emissions. Implementation of the mitigation measures described in Chapter 9 –Air, Dust and Climatic Factors will minimise the potential impacts of this interaction. This will be long term in nature.

Quality of Effect: Positive and Negative (depending upon specific network node)
Significance of Effect: Imperceptible

Population and Human Health - Construction Phase
During the Construction Stage, impact on the population and human health may be negatively impacted with construction works contributing to an increase in noise and traffic volumes as well as a reduction in air quality. The scheme will be developed in line with the Preliminary Construction Management Plan (PCMP) to ensure any impacts on local traffic, including health of pedestrians and cyclists along Station Road and Navan Road are minimised during the construction stage. Impact during the Construction Phase will be short term in nature.

Quality of Effect: Negative
Significance of Effect: Medium

Population and Human Health - Operational Phase
During the Operational Stage, the provision of good quality cycle and pedestrian facilities along the Dunboyne Eastern Distributor Road will provide improvements in health and wellbeing for the general population. This impact will be long term in nature.

Quality of Effect: Positive
Significance of Effect: Medium

Land and Soil - Construction Phase

Delivery of materials to site (e.g. aggregates for road construction, concrete for foundations, delivery of construction plant to site) will lead to potential impact on the surrounding road network. As noted previously, the scheme will be developed in line with the separately enclosed Preliminary Construction Management Plan (PCMP) to ensure any impacts on local traffic is minimised during the construction stage. This impact will be short term in nature.

Quality of Effect: Negative
Significance of Effect: Slight

Land and Soil - Operational Phase
On completion of the Construction Phase, there will be no further impact on soils and the geographical environment.

16.5.10 Material Assets

The proposed development is not considered to have any significant impact on public utilities or natural resources. It is predicted that there will be a minimal use of material assets during the construction phase of the proposed development. Throughout the construction process there will be coordination between the project team and relevant services providers such as Irish Water and ESB to ensure that works are not impacting services in the locality of the development site.

Therefore, the cumulative impact of the proposed development in combination with other permitted and planned projects is considered to be short term and not significant during the construction phase if any planned service interruptions are necessary, and long term not significant during the operational phase of the development.

16.5.11 Waste Management

Cumulative Impacts can be defined as "*impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project*". Effects which are caused by the interaction of effects, or by associated or off-site projects, are classed as indirect effects. Cumulative effects are often indirect, arising from the accumulation of different effects that are individually minor.

A review of other off-site developments and proposed developments listed in Chapter 16 was completed as part of this assessment.

With regard to other developments under construction and proposed in the in the vicinity of the Site of the Proposed Development, there will be a greater demand on existing local waste management services and on regional waste acceptance facilities.

The capacity of waste collection companies and waste management facilities in the Eastern Midlands Region have been designed with forward planning and expansion in mind to cater for a growing population. Existing waste collections currently take place in the local area and during the Operational Phase, the Proposed Development will be added to an existing collection route. The likely effect will be neutral and not significant on waste management facilities in the area in the long term.

17 INTERRELATIONSHIPS BETWEEN THE ASPECTS

17.1 Introduction

No revisions were necessary to this EIAR chapter in responding to Meath County Council's (MCC) decision to request Further Information dated 29th October 2024 in respect to MCC Reg. Ref. 24/60709.

The chapter has been prepared under the guidance within the EIA Directive, the Planning and Development Act 2000 (as amended), the Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2017) and the EPA Guidance on the Information to be contained in Environmental Impact Assessment Reports (EPA 2022).

In accordance with the guidance not only are the individual significant impacts required to be considered when assessing the impact of a development on the environment, but so must the interrelationships between these factors be identified and assessed.

The majority of the EIA report chapters have already included and described assessments of potential interactions between aspects, considered by the various specialists contributing to this impact assessment. This chapter presents a summary and assessment of the identified interactions.

Section 171A of the Planning and Development Act requires that the interactions between the following be assessed:

- Population and Human Health
- Land, Soil, Water, Air and Climate
- Biodiversity, with particular attention to species and habitats protected under the habitats Directive and the Birds Directive

Material assets, cultural heritage and the landscape

17.1.1 Expertise

This chapter of EIAR has been prepared by Katarina Kanevova, a planner, who completed her Master's Degree in Spatial Planning at Slovak University of Technology in Bratislava, Slovakia in 2010. Following her studies she worked in forward planning, specialised on land-use planning projects in Slovakia. Her main focus after moving to Ireland is on residential development. Katarina is a Corporate Member of the Irish Planning Institute.

17.2 Discussion – Positive Impacts

The reasoning behind the interactions that are considered to have a positive effect (i.e., a change which improves the quality of the environment) is outlined in this section.

Traffic, Population and Human Health

During the Operational Stage, the provision of good quality cycle and pedestrian facilities within the proposed development and along the Dunboyne Eastern Distributor Road will provide improvements in health and wellbeing for the general population. This impact will be long term in nature. The effects of such will be **positive and medium.**

The implementation of the mitigation measures described above for the operational stage of the proposed scheme will result in the residual impact to be considered **positive, significant, and permanent.**

The subject proposal will stand to deliver a sustainable and practical approach to residential development at Dunboyne. The development of the Eastern Distributor Road as part of the proposed development will result in a permanent reduction in traffic through Dunboyne town centre. The junction assessments undertaken have demonstrated that the increase in traffic will only result in a slight impact and that the junctions will continue to operate within capacity and therefore have a **positive, significant and permanent** effect on human health of both residents and visitor.

It is considered that the proposed development and any future envisioned residential development proximate to the site will have a positive short-term impact on the area during the construction phase. Short term employment is created in the area during the construction phase of a large residential development, which can have a short-term positive impact on the local economy.

The proposed development will create temporary jobs during the construction phase, which will have a **short-term, positive** effect on employment in the local area.

Furthermore, the proposed residential development will contribute to the consolidation of the lands to the east of Dunboyne as well as providing a significant number of new housing units and expanding the population and subsequently increasing the opportunities that correspond with it therefore having a **positive, significant and permanent** effect.

During the Operational Stage, the provision of good quality cycle and pedestrian facilities within the proposed development and along the Dunboyne Eastern Distributor Road will provide improvements in health and well-being for the general population. This will **medium, positive** effect.

Landscape and Visual Impact

The proposed development will have a **positive, significant and permanent** effect on views along Station Road by significant public realm improvement.

Biodiversity

'Positive', 'permanent', 'significant' residual impacts are envisaged through a net increase in habitat diversity, tree and woodland planting, and floral diversity across the Site, and provision of new bat roosts and swift nesting habitat on Site. It is considered that provided the mitigation measures proposed are carried out in full, there will no significant negative impact to any valued habitats, designated sites or species as a result of the Proposed Development.
The Proposed Development will result in an overall slight positive impact through the landscaping plan, which includes the retention and enhancement of the existing western hedgerows at the Site and a net increase in total native and non-native trees through supplementary planting. This will in turn provide additional suitable foraging, commuting and nesting habitat for local populations of fauna including birds, bats and small mammals in an otherwise relatively ecologically poor agricultural landscape, and will provide connectivity between the Site and the wider area. The inclusion of bat boxes and Swift bricks in the design of the Proposed Development will also provide new roosting habitat for bats at the Site and new nesting habitat for Swifts, respectively. The Proposed Development will therefore provide an overall slight net gain in biodiversity at the Site.

17.3 Discussion – Neutral Impacts

The reasoning behind the interactions that are considered to have a neutral effect (i.e., no effects or effects that are imperceptible, within the normal bounds of variation or within the margin of forecasting error) is outlined in this section.

Noise

During the operational phase of development, it can be concluded that based on the assessment and assumptions outlined in Chapter 10 of the EIAR that once operational, noise levels associated with the proposed development will not contribute to any significant noise impact to its surrounding development. The likely operational noise impact is expected to be **neutral, imperceptible and long-term.**

Traffic

In construction stage, Implementing the proposed mitigation measures that employees will share vehicular transport and HGVs will be evenly distributed across the working day, the residual impact is considered to be **neutral, slight, and short term**.

Regarding the public environment in the construction stage, implementing the proposed mitigation measures as detailed in the Construction Traffic Management Plan, the residual impact is considered to be **neutral, slight and short-term.**

Detailed junction assessments undertaken show that the increase in traffic as a result of the proposed development will result in only slight impact, with junctions continuing to operate within capacity. The implementation of the mitigation measures outlined in section 13.6 will result in the residual impact to be considered as **neutral, slight and permanent.**

There can be a significant interaction between air quality, climate and traffic. This is due to traffic-related pollutants that may arise. In the current assessment, traffic derived pollutants which may affect Air Quality and Climate have been deemed as not significant. Therefore, the **impact of the interaction between air quality and climate is not significant.**

Waste

The use of suitably licensed waste contractors will ensure compliance relevant legal requirements and appropriate off-site management of waste. The implementation of the proposed operational waste management resources will result in the proposed development being unlikely to have a significant environmental impact with respect to operational waste. The likely effect of the operational phase on waste management will be **neutral and imperceptible in the long-term**.

Waste materials will be generated in an ongoing basis during the operational phase; these will for the most part consist of municipal waste and recyclable materials. Careful management of these, including segregation at source, will help to ensure a high level of waste recycling, reuse and recovery at the development. A certain proportion of operational waste will nevertheless need to be disposed of at landfill. Given the provision of appropriate facilities, and their correct user by residents, environmental impacts (e.g. litter, contamination of soil or water, etc.) arising from operational waste storage and removal are expected to be minimal. The use of suitably licensed waste contractors will ensure compliance with relevant legal requirements and appropriate off-site management of waste. With the implementation of the proposed operational waste management measures, the proposed development is not expected to have a significant environmental impact with respect to operational waste. The likely effect of the

operational phase on waste management will be **neutral and imperceptible in the long-term.**

Material Assets, Cultural Heritage & Landscape

No effects during construction or operation are predicted upon the architectural heritage resource and following the completion of all mitigation measures that have been outlined in Chapter 12 there will be **no significant residual impacts** upon the archaeological, architectural or cultural heritage resource.

In the demolition phase the effects on landscape amenity during the construction phase **are unlikely to be significant and adverse** given that there are no structures on the site to be demolished.

Verified views were assessed with a conclusion that it is considered that the proposed development will not have a significant effect on majority of views and that the impact assessment is **neutral, imperceptible to moderate and permanent.**

Air Quality & Climate

It has been predicted in the construction phase of the proposed development that there will be minor impacts on air quality, however they will not have a significant adverse impact on the existing ambient air quality in the vicinity of the site. There are no predicted impacts on air quality and climate arising from the operational phase of the operational phase of the proposed development. Accordingly, the predicted impact will be **long-term-imperceptible-neutral**.

It has been determined that the Operational Phase air quality impact is negligible and therefore no site-specific mitigation measures are proposed

Interactions between Air Quality and Biodiversity have been considered as the construction phase has the potential to interact with flora and fauna in adjacent habitats and designated sites due to dust emissions arising from the construction works. However, the mitigation measures employed at the Proposed Development will ensure that the impacts to flora and fauna **are not significant.**

There can be a significant interaction between air quality, climate and traffic. This is due to traffic-related pollutants that may arise. In the current assessment, traffic derived pollutants which may affect Air Quality and Climate have been deemed as not significant. Therefore, the impact of the interaction between air quality and climate **is not significant**.

Interactions between Air Quality and Population and Human Health have been considered as the Proposed Development has the potential to cause health issues as a result of impacts on air quality from dust nuisances and potential traffic derived pollutants. However, the mitigation measures employed at the Proposed Development will ensure that all impacts are compliant with ambient air quality standards and human health will not be affected. Furthermore, traffic-related pollutants have been assessed and determined as having an overall insignificant impact, therefore air quality impacts from the Proposed Development are **not expected to have a significant impact** on population and human health.

Biodiversity

It is considered that, provided the mitigation measures proposed within Chapter 8 of this report together with all best practice development standards as outlined in the CEMP are

carried out in full, there will be **no significant negative impact** to any KER habitat, species group or overall biodiversity as a result of the Proposed Development.

Interactions between Air Quality and Biodiversity have been considered as the construction phase has the potential to interact with flora and fauna in adjacent habitats and designated sites due to dust emissions arising from the construction works. However, the mitigation measures employed at the Proposed Development will ensure that the impacts to flora and fauna **are not significant.**

Lands, Soil, Geology and Hydrogeology

As a result of the proposed LRD development the current land use will change from a greenfield to a residential development with associated landscaping. Implementation of the measures outlined in the sections above will ensure that the potential impacts of the proposed development on soils and the geological environment do not occur during the construction phase and that any residual impacts will be **short term / imperceptible.**

There are no predicted impacts arising from the operational phase. Accordingly, the predicted impact will be **long-term-imperceptible-neutral.**

As noted above post-development the predicted impact will be **long-term-imperceptible-neutral** and as such there will be no perceptible interaction between the subsoils of the developed site and other environmental impactors discussed within this EIAR.

Should the development not proceed the site would remain in its current state with the only likely impact on the underlying soil and/ or aquifer due to natural processes and current agricultural use. The continued vacancy of the site is likely to have a **neutral and imperceptible effect** on the surrounding environment.

Air Quality and Climate

The Air Quality and Climate Chapter provides various mitigation measures that will be put in place during construction of the proposed development which will ensure that the impact of the development complies with all EU ambient air quality legislative limit values which are based on the protection of human health. The increased traffic movements is likely to contribute to increases in greenhouse gas emissions however these will be marginal in terms of Ireland's overall greenhouse gas emissions and will therefore be unlikely to have an adverse effect on climate

The operational phase of the proposed development will be in compliance with Building Regulations Part L, 2021, Conservation Energy and Fuel. The design and construction of all buildings will be in accordance with Building Regulations Technical Guidance Document Part L 2022 to ensure that modern building materials are used and that they are designed to be thermally efficient

It is predicted that there will be **no negative residual impacts** in the context of air quality and climate regarding the proposed development. Similarly, air quality impacts from the Proposed Development are not expected to have a significant impact on population and human health, traffic and biodiversity due to the mitigation measures that have been proposed.

As negative climatic impacts associated with the Construction and Operational Phases of the Proposed Development **are negligible**, no mitigation measures are proposed. Best practice measures will be implemented to minimise exhaust emissions from construction and operational vehicles and machinery by avoidance of engines running unnecessarily, as idle engines will not be permitted for excessive periods.

Increased LDV and HGV traffic flow as a result of the Proposed Development is likely to contribute to increases in GHG emissions such as CO_2 and N_2O. However, these contributions are likely to be marginal in terms of overall national GHG emission estimates and Ireland's obligations under the Paris Agreement, and therefore **unlikely to have an adverse effect on climate.**

It has been determined that the Operational Phase **air quality impact is negligible** and therefore no site-specific mitigation measures are proposed.

17.4 Discussion – Negative Impacts

Material Assets, Cultural Heritage and the Landscape

Chapter 12 of the EIAR outlines what sites of significance are at risk of disturbance in the construction phase of development. Ground disturbances associated with the construction phase will result in a direct, negative and permanent impact on the archaeological remains which have been identified during the archaeological investigation on site. It remains possible that small or isolated archaeological features survive between beneath the current ground level, outside the footprint of the excavated test trenches, which would be **directly, negatively and permanently affected** by ground disturbances associated with the construction phase. Effects may be moderate to significant in significance, depending on the significance of any remains that are present.

During the construction phase, ground disturbances will result in a **direct, negative and permanent impact** on the archaeological remains identified during the archaeological investigation on site.

During the operation phase, there will be an **indirect, temporary, negative effect** on the setting of Dunboyne corn mill due to the operation of the compound area to the west. Given the poor condition and overgrown nature of the site, this is a slight negative effect.

There is the potential for **likely significant and adverse temporary effects** on the landscape during the construction stage due to the erection and installation of site construction related elements and structures as well as light spill and glare towards residential receptor areas to the north of the site.

There is potential for likely **significant and short-term visual effects** from the use of temporary buildings, machinery necessary for construction works at proposed works as well as stockpiling of materials.

There is the potential for a likely **significant and adverse short-term visual impact** on views into the site from the transportation of the material to be recycled and the recycled material to and from the site.

Waste

All waste materials generated during the construction and operational phases of the Proposed Development will be managed in accordance with the respective waste management plans. During the construction phase, the residual effects on waste management are considered to be **minor, negative and short-term** as a result of the prevention and mitigation measures proposed in the Waste Management chapter and other chapters of the EIAR, the compliance with national legislation and the allocation of adequate time and resources dedicated to efficient waste management practices, and the continued use of permitted/ licensed waste haulers and facilities as well as the correct storage of waste to avoid litter or pollution issues at the site.

Traffic

The projected increase in heavy vehicle traffic during the construction stage may lead to a slight increase in noise and vibration levels along the adopted construction haul routes. The effects of such will be **temporary, negative and slight.**

The projected increase in vehicle traffic during the operational stage may lead to a slight increase in noise levels during peak trip generation periods, however, implementation of the mitigation measures described under section 13.6 of the Transport EIAR chapter will prevent and minimise the potential impacts of this interaction. The effects of such will be **temporary, negative and slight.**

Land, Soil, Water, Air & Climate

During the construction phase, construction traffic will contribute to increased traffic volumes with majority of construction vehicles being HGVs. This will impact negatively on the surrounding air quality. This will be short term in nature and will be managed by means of an effective Construction Environmental Management Plan (CEMP), which has been developed and is submitted alongside this application. The effects of such will be **negative/ imperceptible**.

During the operational phase, development traffic will contribute to increased traffic volumes on the surrounding road network which will in turn impact air quality in terms of additional emissions. Implementation of the mitigation measures described in Chapter 9 – Air Quality and Climate will minimise the potential impacts of this interaction. This will be long term in nature. The effects of such will be **negative/ imperceptible.**

Delivery of materials to site (e.g. aggregates for road construction, concrete for foundations, delivery of construction plant to site) will lead to potential impact on the surrounding road network. As noted previously, the scheme will be developed in line with the separately enclosed Preliminary Construction Management Plan (PCMP) to ensure any impacts on local traffic is minimised during the construction stage. This impact will be short term in nature. The effects of such will be **slight and negative.**

Noise

There is the potential for some construction noise to impact during the construction phase of the development on nearby noise sensitive properties due to emissions from site activities. Set noise limits, hours of construction and the implementation of mitigation measured in EIAR Chapter 10 will ensure that construction noise and vibration is limited to short term with slight/ no significant effect. The effects of such will be **short-term, negative and slight.**

Population and Human Health

During the Construction Stage, impact on the population and human health may be negatively impacted with construction works contributing to an increase in noise and traffic volumes as well as a reduction in air quality. The scheme will be developed in line with the Preliminary Construction Management Plan (PCMP) to ensure any impacts on local traffic, including health of pedestrians and cyclists along Station Road and Navan Road are minimised during the construction stage. Impact during the Construction Phase will be short term in nature. The effects of such will be **medium and negative.**

Biodiversity

In terms of residual impacts, the construction mitigation measures detailed in this Chapter and those included within the NIS, along with the design features to be adopted to offset/minimise adverse impacts to habitats animals at the Site, will be sufficient to

reduce any identified potential impacts to KERs associated with the Site to **'negative', 'imperceptible' to 'slight', 'short-term' to 'permanent'** in nature.

Landscape and Visual Impact

Following the completion of all mitigation measures, for the most part, there will be no significant residual impacts upon the landscape and visual resource.
The greatest effects on the landscape and visual resource will however be experienced at the northern end of the site. The height and scale of the proposed part 5 and part 6 apartment building of Block C will be visually prominent in the landscape, alongside the existing pylons and overhead wire infrastructure and will remove any positive features of the open rural landscape, tree lines and hedgerows in the background of view. The magnitude of change in this location on the landscape and visual resource is considered high given the height and scale of Block C. The quality of the effect is considered **negative**. The significance of effect is considered **significant**. The duration of effect is considered **permanent**.

17.5 Conclusion

In accordance with EPA *'Guidelines on the Information to be contained in Environmental Impact Statements'* (2022) all environmental factors are inter-related to some extent. A synergistic effect occurs when:

'The resultant effect is of greater significance than the sum of its constituents'

All environmental topics are interlinked to a degree such that interrelationships exist on numerous levels as outlined as per each topic above. In summary, it is concluded that the proposed development will not result in any significant synergistic effects on the environment.

	Planning & Alternatives		Population & Human Health		Biodiversity		Noise & Vibration		Land, Soil, Water, Air & Climate		Material Assets, Cultural Heritage & Landscape		Traffic and Transportation		Waste	
	Con.	*Op.*	*Con.*	*Op.*	*Con.*	*Op.*	*Con.*	*Op.*	*Con.*	*Op.*	*Con.*	*Op.*	*Con.*	*Op.*	*Con.*	*Op.*
Planning & Alternatives			X	X	X	X	X	X	X	X	X	X	X	X	X	X
Population & Human Health					X	X	-	O	X	X	X	X	-	+	-	-
Biodiversity			-	-			-	O	X	X	X	X	X	X	-	-
Noise & Vibration			-	O	-	O			O	O	-	-	-	-	-	X
Land, Soil, Water, Air & Climate			O	O	X	+	O	O			X	X	-	-	-	-
Material Assets, Cultural Heritage & Landscape			X	X	O	+	X	X	X	X			X	X	X	X
Traffic and Transportation			-	+	O	O	-	O	-	-	-	O			-	-
Waste			-	-	O	O	X	X	-	-	O	O	X	X		

	X	No Interaction		-	Negative		Con.	Construction
	+	Positive		O	Neutral		Op.	Operation

Table 17.1 – Comparison of Interrelationships