ENVIRONMENTAL IMPACT ASSESSMENT REPORT

NON-TECHNICAL SUMMARY

PROPOSED LARGE-SCALE RESIDENTIAL DEVELOPMENT

AT

RAILPARK, MAYNOOTH, CO. KILDARE

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Non-Technical Summary

INTRODUCTION

This Environmental Impact Assessment Report (EIAR) has been prepared on behalf of the applicant, Cozone Ventures Ltd, in respect to this Large-scale Residential Development application for lands at Railpark, Maynooth, Co. Kildare. The application is for a ten-year permission for a residential-led development comprising 581 no. residential units (including 185 no. apartments/duplexes and 396 no. houses), a neighbourhood centre, public open space, landscaping, car and cycle parking, access from the permitted Maynooth Eastern Ring Road (MERR), and all associated site and infrastructural works. The application site has an overall area of approximately 15.27 hectares.

This document is a summary of the information contained in the EIAR. For detailed information and key mitigation and remedial measures please consult the full EIAR document.

Purpose of the EIAR

The objective of this EIAR is to identify and predict the likely environmental impacts of the proposed development; to describe the means and extent by which they can be reduced or ameliorated; to interpret and communicate information about the likely impacts; and to provide an input into the decision making and planning process.

The EIAR is the primary element of the Environmental Impact Assessment (EIA) process and is recognised as a key mechanism in promoting sustainable development, identifying environmental issues, and in ensuring that such issues are properly addressed within the capacity of the planning system.

The Requirement for an EIAR

Projects needing environmental impact assessment are listed in Schedule 5 of the Planning and Development Regulations 2001, as amended (Regulations).

Schedule 5 (Part 1) of the Regulations transposes Annex 1 of the EIA Directive directly into Irish land use planning legislation. The EIA Directive prescribes mandatory thresholds in respect to Annex 1 projects.

Annex II of the EIA Directive provides EU Member States discretion in determining the need for an EIA on a case-by-case basis for certain classes of project having regard to the overriding consideration that projects likely to have significant effects on the environment should be subject to EIA.

Schedule 5 (Part 2) of the Planning and Development Regulations 2001, as amended, sets mandatory thresholds for each project class. Sub-section 10(b) (i) to (iv) addresses *'Infrastructure Projects'* and requires that the following relevant class of project be subject to EIA:

- Class 10(b)(i) the threshold is 'more than 500 dwelling units'.
- Class 10(b)(iv) Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere.

In summary, the development comprises a Large-scale Residential Development of 581 no. residential units, consisting of 396 no. houses and 185 no. duplex/apartment units. (53 no. 1 beds, 151 no. 2 beds, 315 no. 3 beds and 62 no. 4 beds). The proposals also include a five to part six storey Neighbourhood Centre – childcare facility (762 sq.m), café / restaurant unit (74 sq.m), health centre (174 sq.m), and two no. Class 1- Shop units (124 sq.m) and (166 sq.m).The development provides public and communal open spaces, landscaping, car and cycle parking spaces, internal roads, pedestrian and cycle paths, associated vehicular accesses, ESB substations, and all associated site and infrastructural works.

The proposed development is for 581 no. units and has an overall area greater than 10 hectares within a built-up area, and therefore mandatory Environmental Impact Assessment is required in respect of the proposed development.

The following components are addressed in the EIAR:

Ch.	Title	Content
1	Introduction and Methodology	Sets out the purpose, methodology and scope of the document.
2	Project Description and Alternatives	Sets out the description of the site, design and scale of development, considers all relevant phases from construction through to existence and operation together with a description and evaluation of the reasonable alternatives studied by the developer including alternative locations, designs and processes considered; and a justification for the option chosen taking into account the effects of the project on the environment.
3	Population and Human Health	Describes the demographic and socio-economic profile of the receiving environment and potential impact of the proposed development on population, i.e. human beings, and human health.
4	Archaeology, Architecture and Cultural Heritage	Provides an assessment of the site and considers the potential impact of the proposed development on the local archaeology, architecture and cultural heritage; and outlines mitigation measures.
5	Biodiversity	Describes the existing ecology on site and in the surrounding catchment and assesses the potential impact of the proposed development and mitigation measures incorporated into the design of the scheme.
6	Landscape and Visual Impact	Details the likely effects on the landscape and visual environment of the proposed development with reference to the accompanying verified view montages.
7	Land and Soils	Provides an overview of the baseline position, the potential impact of the proposed development on the site's soil and geology and impacts in relation to land take and outlines mitigation measures.
8	Hydrogeology	Provides an overview of the baseline position, the potential impact of the proposed development on the site's hydrogeology and outlines mitigation measures.
9	Water	Provides an overview of the baseline position, the potential impact of the proposed development on water quality and quantity and outlines mitigation measures.
10	Air Quality	Provides an overview of the baseline air quality and climatic environment, the potential impact of the proposed development, and outlines mitigation measures.

11	Climate	Provides an overview of the baseline climatic environment, the potential impact of the proposed development, and outlines mitigation measures.
12	Noise and Vibration	Provides an overview of the baseline noise environment, the potential impact of the proposed development and outlines mitigation measures.
13	Traffic and Transport	Describes the existing transport services and infrastructural service requirements of the proposed development and the likely impact of the proposed development on these material assets.
14	Material Assets	Describes the existing services and infrastructural service requirements of the proposed development and the likely impact of the proposed development on material assets.
15	Interactions of the Foregoing	Describes the potential interactions and interrelationships between the various environmental factors.
16	Principal Mitigation and Monitoring Measures	Sets out the key mitigation and monitoring measures included in the above chapters of the EIAR Document for ease of reference.
Non-Technical Summary		Provides a concise non-technical summary of the information contained in the EIAR

PROJECT DESCRIPTION AND ALTERNATIVES EXAMINED

This chapter provides a detailed description of the subject site, its surrounding context and details of the proposed development, and outlines the reasonable alternatives considered as required under the 2014 EIA Directive and the P&D Regulations. The chapter explains that the consideration of alternative locations was not considered reasonable or appropriate having regard to the nature and location of the subject site, the consideration of patterns of development in the SEA for the County Development Plan and the Maynooth LAP, and the land use and planning policy context. Likewise, it was not considered relevant to set out alternative uses on the subject site, as no reasonable alternative uses were identified having regard to the planning policy context. However, details have been provided of considerations of alternative designs. The reasons for the choice of the preferred design proposed have been set out, with mitigation measures provided relating to the selected development proposal.

The application site has a total area of c. 15.27 hectare and is located on the eastern side of Maynooth, south of the Dublin-Sligo railway line and the Royal Canal, in an area known as Railpark. The subject lands form part of the designated 'Key Development Area – Railpark' in Section 11.4.1 of the Maynooth and Environs Joint Local Area Plan 2025-2031. The subject site is zoned C(2)- New Residential with a small portion of the lands zoned N- Neighbourhood Centre as outlined on Map 11.1 of the JLAP. The proposed development relates to the southern part of the Railpark Key Development Area.

The application site comprises a greenfield site located at Railpark, and is situated at the edge of the established built-up area of Maynooth. The site is situated to the east / south east of established residential neighbourhoods at Parklands and Rockfield. The application site is bound by Parklands Grove housing estate to the west, greenfield sites to the north and east and to the south by the ongoing development of 'The Grange' residential development.

The application site primarily consists of grassland, with the field margins consisting of hedgerows, a mixture of native and non-native species. The majority of hedgerows are to be retained as part of the

proposed development. The lands do not contain any other significant site or environmental features as discussed in the relevant chapters of the EIAR and therefore can be classified as not being environmentally sensitive lands.

Development Description

In summary, a ten-year planning permission is being sought for a proposed development comprising 581 no. residential units, a neighbourhood centre and all associated development, on a site of approximately 15.27 hectares.

The residential component of the development consists of 185 no. apartment / duplex apartments and 396 no. houses to be provided as follows:

- 59 no. 2 bed two storey mid terraced houses;
- 52 no. 3 bed two storey mid terrace houses;
- 223 no. 3 bed two storey end terrace/semi-detached houses;
- 58 no. 4 bed two storey semi-detached houses;
- 4 no. 4 bed two storey detached houses;
- 185 no. duplex apartments / apartments (53 no. 1 beds, 92 no. 2 beds, 40 no. 3 beds) in a series of 3 to part 6 storey duplex apartment blocks / apartment blocks.

The proposed neighbourhood centre consists of 3 no. buildings (Block A, Block B and a single storey standalone café / restaurant kiosk building) and a new public plaza and communal open space. Block A is part 5 storey / part 6 storey building comprising health centre (174 sq.m) and two no. shop units (124 sq.m pharmacy and 166 sq.m convenience shop) at ground floor level and 41 no. apartments (17 no. 1 beds and 24 no. 2 beds) from first to fifth floor level. Block B is a 5 storey building block comprising a childcare facility (762 sq.m) at ground floor level and 48 no. apartments (21 no. 1 beds and 27 no. 2 beds) from first to fourth floor level.

96 no. duplex apartments units (12 no. 1-bed, 48 no. 2-bed, and 36 no. 3-bed units) are provided in 5 no. blocks (Blocks 1 to 5) ranging from 3 no. storeys to 5 no. storeys. All duplex apartments and apartment units are provided with a balcony, terrace or private garden on all elevations.

A total of 888 no. surface car parking spaces are proposed for residential units, visitor parking and the neighbourhood centre commercial uses. A total of 623 no. cycle spaces are proposed for long stay/residents, 42 no. spaces for the neighbourhood centre commercial uses and 93 no. short stay/visitor cycle parking spaces.

The proposal includes significant public open space including a new Local Park, linear park and pocket parks, children's play areas and ancillary play area for the childcare facility. The development includes hard and soft landscaping, lighting, boundary treatments and communal open space areas.

The proposed development provides for two no. vehicular accesses from the permitted Maynooth Eastern Ring Road (MERR), including a new pedestrian/cyclist signalised crossing, associated internal roads, pedestrian and cycle infrastructure, set down areas, bin and bike stores, paths and access points provided up to the application site boundary to provide for potential future connections to adjoining lands to the north and south.

The development includes foul and surface water drainage, 6 no. ESB Substations, green roofs, PV panels, plant, services and all associated and ancillary site works and development.

Alternatives Examined

This chapter also includes a summary of reasonable alternatives which were considered for the proposed development of the subject lands. These options were considered as the scheme progressed and the key considerations and amendments to the design having regard to the key environmental issues pertaining to the lands are summarised in this section of the EIAR.

POPULATION AND HUMAN HEALTH

The 2014 EIA Directive (2014/52/EU) updated the list of topics to be addressed in an EIAR and replaced 'Human Beings' with 'Population and Human Health'.

Population (human beings) and Human Health is a broad ranging topic and addresses the existence, activities and wellbeing of people as groups or 'populations'. While most developments by people will affect other people, this EIAR document concentrates on those topics which are manifested in the environment, such as new land uses, more buildings or greater emissions.

- Water
- Noise and Vibration
- Air Quality
- Landscape and Visual Impact
- Economic Activity
- Social Patterns
- Land-Use & Settlement Patterns
- Health & Safety, and
- Risk of Major Accidents and Disasters.

The proposed development is not likely to result in any significant adverse effects on population and human health and will result in several positive impacts. These include *inter alia* a positive impact on housing available in the area, at a sustainable density, and in an appropriate location, additional public open space and transport infrastructure, and economic and social benefits derived from the employment opportunities and facilities provided within the Neighbourhood Centre. The daylight and sunlight and microclimate / wind impacts of the proposed development are addressed in separate standalone reports accompanying the application.

The implementation of the range of remedial and mitigation measures included throughout this EIAR document will have the impact of limiting any likely adverse environmental impacts of the construction and operational phase of the proposed development on population and human health.

ARCHAEOLOGY, ARCHITECTURE AND CULTURAL HERITAGE

Archaeological Consultancy Services Unit (ACSU Ltd) prepared this chapter in order to assess the impacts, if any, on the known and potential cultural heritage resources as a result of the proposed the

Large-scale Residential Development (LRD) at Railpark, Maynooth, Co. Kildare. The assessment was carried out by Magda Lyne and Donald Murphy of ACSU Ltd.

There are no recorded archaeological sites located within the development area. The nearest monuments consist of Burial Ground (KD010-040----) and a Furnace (KD011-061----), recorded 480m and 500m, respectively, to the south of the site. There are no protected structures within the site, the nearest such structure is Lime Kiln (RPS ID. B06-06) located c. 310m to the northeast of the site. No specific cultural heritage features have been identified in relation to the proposed development area or its immediate environs.

A number of policies and objectives of Kildare County Development Plan 2023-2029 and the Maynooth and Environs Local Area Plan 2025-2031 are relevant to the site (see Section 4.2). Policy AH O3 of the Kildare County Development Plan 2023-2029 requires the proposed development be subject to a full archaeological assessment. An Archaeological Impact Assessment (Lyne 2024) was prepared by ACSU, its findings are included in the chapter, the recommendation for the site included geophysical survey and test trenching at the pre-construction phase. A geophysical survey was since carried out (see Section 4.3.7 for details) and test trenching has been scheduled for October 2025, i.e. pre-construction mitigation measure.

The geophysical survey identified two curvilinear anomalies that likely represent ring-ditches (M1 & M2) within the site as well as scatters of other anomalies are also labelled as potential archaeology (?Archaeology[1]) and other anomalies of archaeological potential requiring further assessment with test trenching recommended at pre-construction phase. The ring-ditches are relatively common archaeological features and is standard for these to be subject to test-trenching and recording by record rather than a requirement to retain in-situ.

The predicted effects on the recorded archaeological resource (SMRs/RMPs) is regarded as none, as none were identified, and no indirect or visual effects on the nearest recorded monument outside the proposed development site boundary was noted.

Any archaeology identified within the site, i.e. such as the ring ditches, will be directly impacted by ground works associated with the proposed development. Mitigation (preservation by record/excavation with the use of metal detector) of archaeological features and monuments identified as a result of geophysical survey and test trenching will be carried out by a licence-eligible archaeologist in consultation with and under licence from the NMS of the DHLGH. Consultation with the NMS will be maintained throughout. While preservation in-situ of archaeological remains is the preferred option in which to conserve the archaeological resource, due to nature of the ring ditches it is not considered necessary in this instance and preservation by record / excavation at pre-construction is considered an appropriate mitigation measure. Full provision will be made available for the resolution of the archaeological remains, both on site and during the post-excavation process.

Following test trenching and excavation, it is possible that small or isolated archaeological features may survive beneath the current ground level, outside of the footprint of the excavated test trenches and/or excavation areas. Groundworks associated with the development may have a direct negative impact on these remains. Impacts may range from moderate to significant, depending on the nature, extent and

[1] ?Archaeology = Anomaly representing a potential archaeology feature; its nature needs to be determined during test trenching

significance of the archaeological remains that may be present. As such, all topsoil stripping associated with the development will be subject to archaeological monitoring by a suitably qualified archaeologist. Should any archaeological remains be identified, consultation will be required with the National Monuments Service regarding appropriate mitigation measures.

No construction or operational effects are predicted upon the architectural heritage resource. No operational effects are predicted upon archaeological resources, as these will be mitigated at the construction phase.

The above mitigation measures will be included in the Construction Environmental Management Plan to be submitted prior to construction of development.

BIODIVERSITY

The biodiversity chapter of the Environmental Impact Assessment (EIA) was carried out by DNV (formerly Enviroguide). The Biodiversity Chapter details the Ecological Impact Assessment (EcIA) of the Proposed Development and assesses the potential effects of the Proposed Development on habitats and species; with a particular focus on those protected by national and international legislation or considered to be of nature conservation importance on or adjacent to the Site.

A desktop study was carried out in 2024 and 2025 to collate and review available information, datasets and documentation sources pertaining to the Site's natural environment. A suite of ecological surveys were then carried out across 2024 and 2025 (as shown in Table 1 below) to establish the baseline biodiversity at the Site and assess the potential impacts of the Proposed Development on local biodiversity.

Table 1: Field surveys undertaken at the Proposed Development Site.

Survey	Surveyor	Dates
Preliminary Habitat and Invasive Flora Survey	DNV (SH and KC)	17th of July 2024.
Bat Transect survey	DNV (BMcC and BS)	9th of October 2024
Winter Bird Survey	DNV (CS and TR)	20th of November 2024 17th of December 2024 17th January 2025 25th February 2025
Breeding Bird survey	DNV (BMcC	11th April 2025 28th May 2025 16th June 2025
Badger Survey	DNV (CS, BS, LG, SC)	5th of December 2024 16th July 2025 –23rd July 2025

Designated Sites

The Site is connected to Rye Water/Valley Carton SAC and Rye Water Valley/Carton pNHA, designated ecological sites via groundwater and indirect hydrological pathways, and as such, careful consideration was given to potential pollution risks during construction. With appropriate measures in place to protect water quality and protect key habitats, no significant long-term ecological effects are expected. A Natura

Impact Statement (NIS) has been prepared for the proposed development, and submitted as a separate report, given the potential for impacts on the Rye Water/Valley Carton SAC.

The Royal Canal pNHA which lies approximately 400m north of the Proposed Development, and the Grand Canal pNHA have been ruled out due to buffer distances, high dilution effect, and the closed, concrete lined water system of the Royal Canal pNHA.

Habitats

The main habitat present at the Site consisted of Improved Grassland (GA1)[2] which was species-poor and of low conservation value.

The field margins consisted of large hedgerows, a mixture of native and non-native species and were of higher conservation value at a local scale for their provision of habitat connections to surrounding environments. The majority of hedgerows are to be retained as part of the Proposed Development, however, the removal of small sections to facilitate the Proposed Development and associated infrastructure is required, and there are potential adverse impacts to hedgerows and tree lines during construction via damage by large machinery. Mitigation is set out in the biodiversity chapter to reduce potential impacts during any clearance of vegetation present at the Site, and protection of retained vegetation during construction. In addition, there is additional hedgerow planting included in the landscaping designs which will provide increased linear habitat and act to offset any habitat loss due to removal of the hedgerow vegetation at the Site.

Invasive Species

During the desk study, Japanese knotweed (*Reynoutria japonica)* was the only invasive species recorded in the 2km grid square encompassing the Site, however this high impact invasive species was not recorded at the Site during the Invasive Flora survey.

The invasive flora survey recorded a cherry laurel (*Prunus laurocerasus*) along the western boundary of the Site. Cherry laurel is a medium impact invasive alien plant species. To avoid any potential spread of the non-native invasive species, mitigation to remove any stands of cherry laurel within the Site has been recommended in this chapter.

Bats

Two bats were recorded in the 2km and 10km square, namely common pipistrelle (*Pipistrellus pipistrellus*) and Daubenton's bat (*Myotis daubentonii*), and the Proposed Development Site is located in an area with an overall high suitability for bats in general, scoring 39 in The Bat Conservation Ireland Landscape Suitability Model[3]

No trees, buildings or structures with potential for roosting bats were recorded within the Site boundary. The linear hedgerow and tree line features along the boundaries of the Site were assessed as providing 'Moderate' habitat suitability for foraging and commuting bats. Three transect surveys were therefore carried out in Autumn 2024, Spring and Summer 2025 to assess the bat activity and importance of hedgerows as commuting corridors for bats at the Site. Species diversity was similar across all transects, recording common pipistrelle, and soprano pipistrelle (*Pipistrellus pygmaeus*) and Leisler's bat (*Nyctalus*

[2] Fossitt (2000) Guide to Habitats in Ireland. The Heritage Council.
[3] Lundy M.G., Aughney T., Montgomery W.I., Roche N. (2011) Landscape conservation for Irish bats & species specific roosting characteristics. Bat Conservation Ireland.

leisleri). A slight increase in Leisler's bat suggested the site is moderately important for foraging this species during the summer months. Overall, bats were recorded at relatively low numbers and activity was concentrated along hedgerows.
Potential impacts to bats are mainly from loss of hedgerows and light disturbance. The hedgerow planting and replacement in the landscaping design of the Proposed Development in addition to the bat and mammal lighting plan will reduce the likelihood of any significant adverse impact to commuting bats.

Breeding birds
A suite of both winter bird surveys and breeding bird surveys has been carried out at the Site. Surveys recorded a good variety of species, with confirmed breeding for multiple passerines including Amber and Red listed species in the Birds of conservation concern in Ireland (BOCCI)[4]. The breeding bird assemblage is considered high value of local importance. To avoid any potentially significant impacts by disturbance or loss of habitat to breeding birds, mitigation to avoid vegetation clearance during the bird breeding season, a lighting management plan in both the construction and operational phases of the development has been included in the mitigation sections of the biodiversity chapter. Bird boxes are also included to provide additional opportunities for nesting birds within the landscaping of the Proposed Development.

The Site was considered of low ecological value to wintering bird assemblages with only three Snipe (*Gallinago gallinago*) flushed from the central grassland and no significant wader or waterfowl populations recorded.

Mammals (excl. bats)
A total of 17 mammals were recorded during the desk study, within the 10km grid square encompassing the Site, ten of which were native terrestrial mammals, with nine of these species afforded legal protection under the Wildlife (Amendment) Act, 2000, namely badger (*Meles meles*), otter (*Lutra lutra*), Irish hare (*Lepus timidus subsp. Hibernicus*), Irish stoat (*Mustela erminea subsp. Hibernica*), pine marten (*Martes martes*), red deer (*Cervus elaphus*), hedgehog (*Erinaceus europaeus*), red squirrel (*Sciurus vulgaris*), and Eurasian pygmy shrew (*Sorex minutus*).

An initial mammal survey was carried out during the PEA walkover. Due to the presence of mammal trails with entry points into hedgerow bases, further investigation for protected mammal species was conducted during winter, and a trail camera was set up to investigate any potential badger activity at the Site, following the identification of a potential sett. Small mammal burrows are present along the hedgerow bases, likely due to small rodents. On further investigation, the potential sett was concealed by bramble in following Site visits, with no signs of mammal trails, or any other evidence of badger, however there were numerous recordings of fox, with evidence of fox presence found throughout the Site. It was concluded that the mammal burrow was either no longer in use, or that of a fox burrow. Badgers are likely residing in lands to the north of the Site and utilise numerous points along the northern hedgerow to enter and exit the Site to forage.

In order to avoid any potentially significant adverse impacts to non-volant mammals including rodents and badgers, lighting mitigation during construction and operational phases, avoidance of accidental trapping of mammals during constriction and pre-commencement surveys are outlined in the mitigation section of the biodiversity chapter.

[4] Gilbert, G., Gibbons, D.W., and Evans, J. (1998): Bird Monitoring Methods: a manual of techniques for key UK species. Sandy: RSPB.

Amphibians

Both common frog (*Rana temporaria*) and smooth newt have (*Lissotriton vulgaris)* been recorded in the desk study of the Site. During the initial site visit, habitats on Site were checked for signs of amphibians. No ponds or other areas of standing or very slow-flowing water, which provide suitable breeding habitat for amphibians, were recorded at the Site. It is therefore presumed that the Site is not being utilised by breeding amphibians

Common Lizard

No records of common lizard (*Zootoca vivipara*) were found during the desk study. As no targeted surveys for common lizard were carried out and given that common lizards are less likely to be observed in the field, but are widespread throughout Ireland, it is assumed under the precautionary principle that a locally important population of this species may be present at the Site. To avoid any significant adverse impacts to common lizards, the mitigation outlined in the biodiversity chapter for vegetation clearance and avoidance of accidental trapping of fauna is also relevant and considered for common lizard potentially utilising the habitat at the Site.

Fish and other Aquatic species

There are no waterbodies within the Site of the Proposed Development that could support notable fish species such as salmonids or lampreys. The Site drainage network during the Operational Phase of the Development connects to the Lyreen stream which ultimately flows into the Rye water. In addition, records for White-clawed Crayfish (*Austropotamobius pallipes*) have been recorded in the Rye water river to the north. Due to the designation of the downstream river network, Rye Water/Valley Carton SAC, this hydrological pathway has been discussed extensively in the NIS, under a separate document, and mitigation outlined in the NIS will avoid any significant adverse impacts to the fish and other Aquatic species associated with downstream river networks from the Site.

Invertebrates

The marsh fritillary (*Euphydryas aurinia*) butterfly is the only insect in Ireland that is listed on Annex II of the Habitats Directive, which makes it the only insect protected by law in Ireland. The desk study found no records of marsh fritillary within the 10km grid square which encompass the Proposed Development, no individuals of this species or it's associated food plant (devil's bit scabious (*Succisa pratensis*)), were recorded during any of the field surveys at the Site.

A diverse range of invertebrates including solitary bees and Lepidopteran species were recorded from incidental sightings during field surveys to provide a more in-depth range of baseline biodiversity for the Site.

Biodiversity enhancement

The biodiversity chapter has also included a Biodiversity Management Plan (BMP), in section 5.8.3, which sets out a series of long-term, site-specific measures to enhance and support biodiversity at the Proposed Development, including hedgerow enhancement and gap planting, managing boundary grassland edges as meadow margins and pollinator strips, control and management of invasive species, ecologically informed planting at Sustainable Drainage Systems (SuDs) including a mix of wetland plants along attenuation areas and swales, long term habitat management of biodiversity relevant features post-construction, and community engagement and signage near biodiversity enhancement features to highlight their ecological value.

Residual Effects

The surveys recorded a typical mix of habitats and species, including hedgerows, treelines, grassland, birds, bats, and terrestrial mammals such as badger and fox. No rare or protected plant species were found on Site.

A suite of mitigation measures has been proposed, including sensitive lighting design, pollution control, protection of boundary habitats, and seasonal clearance of vegetation. In addition, biodiversity enhancements will be delivered through native planting, bird and bat boxes, and reduced mowing of landscaped areas to allow wildflowers to thrive.

With these safeguards in place, the Proposed Development is not anticipated to result in any significant negative effects on local biodiversity.

All mitigation measures detailed in section 5.8 of the Biodiversity Chapter will be implemented in full and will remain effective throughout the lifetime of the facility. Therefore, no significant negative residual impacts on the local ecology or on any designated nature conservation sites will result from the Proposed Development.

LANDSCAPE AND VISUAL IMPACT

The Landscape and Visual Impact Chapter of the EIAR was prepared by Áit Urbanism + Landscape Ltd. Desktop studies were undertaken to evaluate the existing site conditions such as topography, vegetation, settlement patterns, contiguous land use, drainage, landscape character as well as overall visibility of the site from surrounding areas. Information was also collated on protected views, scenic routes, special and protected landscapes.

The site is bordered to the south by lands zoned as Community and Education, and to the east by land zoned for the Maynooth Eastern Ring Road (MERR). The Maynooth and Environs Joint Local Area Plan 2025-2031 identifies the site as one of four specific 'Key Development Areas' (KDAs) within Maynooth.

The Landscape Character of the subject site is categorised as 'Northern Lowlands' Landscape Character Type and is ranked as:

Class 1 Low Sensitivity: *Areas with the capacity to generally accommodate a wide range of uses without significant adverse effects on the appearance or character of the area. This area has a most compatible rating for agriculture, and a high compatibility rating for housing, urbanisation and infrastructure.*

The lands can be described as a peri-urban landscape, in a former agricultural landscape setting on the south-eastern outskirts of Maynooth town. The majority of the site is currently grassland with a mix of grass species and is bordered to the west by suburban housing. Hedgerows form the site boundary, comprising of trees and hedgerows.

In general, the landscape sensitivity of the site and its immediate environs can be described as low with a high capacity for change. However, a number of highly sensitive landscapes are located to the north and east, within 1 km of the site.

The Kildare County Development Plan 2023-2029, and the Maynooth and Environs Joint Local Area Plan 2025-2031 were reviewed to scope out potential impacts of the proposed development on views from

protected and sensitive landscapes, scenic views/routes, protected views, built and cultural heritage sites:

- Maynooth Town Architectural Conservation Area and Important Views
- Carton Demesne: Protected Area
- Views to and from bridges on the Royal Canal
- Proposed NHA's

Given the distance from the site, intervening topography and the existing built environment, it is anticipated there would be no impact on the Maynooth Town Architectural Conservation Area or any of the Important views associated with the Maynooth Town ACA.

A number of views were then selected from key designated identified sensitive receptors for further assessment in the form of photomontages (before and after views).

These include:

- *View 6:* Carton Demesne: Protected Area: Scenic Route 28 through southwest of Carton Demesne (Protected Area)
- *View 4*: Scenic Viewpoint along the Royal Canal RC5 : Railpark/Donaghmore (Pike Bridge): Views to and from bridges on the Royal Canal, and Proposed NHA's (Royal Canal)
- *View 16:* Royal Canal, proposed NHA. Highly Sensitive Landscape (Landscape Character Sensitivity)
- *View 17*: Royal Canal, proposed NHA. Highly Sensitive Landscape (Landscape Character Sensitivity)

The proposed development itself will not be visible from these viewpoint locations. The future MERR (Maynooth Eastern Ring Road) was modelled in View 17 to assess the cumulative effect of the proposed development. The effect of the permitted MERR road embankment and associated infrastructure is considered to have a negative, profound and permanent effect on the landscape character and visual amenity of a small section of the Royal Canal (pNHA) north of the site.

A detailed tree survey was undertaken by the project arboricultural consultant Charles McCorkell. The majority of the boundary hedgerows to the west and north on site will be retained and improved with appropriate supplemental planting. A number of trees within the hedgerow to the north of the site will also be retained, with sections of hedgerow removed where necessary, to allow for access routes.

In terms of ecology and assessment of local flora and fauna, the biodiversity of the site has been assessed within Chapter 5 Biodiversity of the EIAR, by DNV, Biodiversity and Environment Services. Identified habitats include WL1 Hedgerows, WL2 Tree Lines, GA1 Improved agricultural lands, and GM1 Marsh. Both Japanese Knotweed *(Reynoutria japonica)* and Cherry Laurel *(Prunus laurocerasus)* were found within the site boundary, both are invasive species.

The project ecologists, landscape architects and arboriculturist have worked closely with the design team to ensure the retention of the important local habitats of value and have presented designed-in mitigation measures or design solutions, monitoring and future management guidance for the enhancement of these valued elements. It is anticipated that the proposed development will result in an approximate Biodiversity Net Gain of 396m of hedgerow and 1,647m of treelines.

A full description of the proposed development is contained in Chapter 2 Project Description and Alternatives. The proposal includes 2.76 ha of public open space including a new Local Park, linear park and pocket parks, children's play areas and ancillary play area for the childcare facility. The development includes hard and soft landscaping, lighting, boundary treatments and communal open space areas.

The site plan and landscape masterplan for the Railpark lands has been developed around a strong green infrastructure network which seeks to incorporate existing green infrastructure assets in the form of hedgerows, and establish a network of green spaces that are:

- Usable and connected
- Safe and attractive
- Support biodiversity through habitat retention and creation
- Incorporate nature based solutions (SuDS)
- Support active travel
- Provide for healthy lifestyles through play, exercise and sports

In terms of the assessment of potential visual effects of the construction and operational stages of the proposed development, seventeen photomontages were prepared by Digital Dimensions. The views were chosen as being representative of the key sensitive views in terms of effects on local sensitive receptors and are taken from the public domain. (Please see Digital Dimension Document for Verified Views in A3 format in Appendix 6.1).

In terms of Scenic Routes and Scenic Views, the following have been assessed:

Views to and from Bridges on the Royal Canal:
RC5: Railpark/Donaghmore (Pike Bridge): See Viewpoint 4

Scenic Routes
Scenic Route 28 : Carton Demesne: See Viewpoint 5

Table 2: Views Assessment

Location	View No.	Quality of Effects	Significance of Effects	Duration Of Impact
M4 overbridge / Straffan Road (R406).	1	None	None	None
R405 overbridge and the M4 motorway	2	None	None	None
Ballygoran Road	3	Neutral	Slight	Permanent
Scenic Viewpoint Along Royal Canal RC5:Railpark/Donaghmore (Pike Bridge)	4	None	None	None
Ballygoran Road	5	Neutral	Moderate	Permanent
Scenic Route 28 through southwest of Carton Demesne (Protected Area)	6	None	None	None
Parkland Grove	7	Neutral	Moderate	Permanent
Parkland Grove	8	Neutral	Moderate	Permanent
Parklands Place	9	Neutral	Slight	Permanent
Rockfield Green	10	Neutral	Slight	Permanent
Rockfield Manor	11	None	None	None

R405 Celbridge Road	12	Neutral	Slight	Permanent
R405 Celbridge Road Opposite the Educate Together Primary School	13	Neutral	Slight	Permanent
R405 Celbridge Road	14	Neutral	Slight to moderate	Permanent
R405 Celbridge Road	14 Proposed Cumulative	Neutral	Significant	Permanent
Celbridge Road, South East of the Site	*15 Additional View*	None	None	None
Royal Canal – North East of the site	*16 Additional View*	None	None	None
Royal Canal – North of the Site	*17 Additional View*	None	None	None
Royal Canal – North of the Site, including the future MERR	*(Cumulative-MERR)*	Negative	Profound	Permanent

The quality of the effect of visual change ranges from none to neutral in all scenarios, with the exception of the View 17 (Cumulative View) where the visual effect of the construction of the permitted MERR is considered negative at a location north of the site on the Royal Canal (a sensitive location given its pHNA designation).

The significance of effect of visual change ranges from none to significant in all scenario's, again bar Cumulative View No. 17, where the significance of effect (of the MERR) is considered profound. The duration of impact ranges from none to permanent.

The subject site presents as a former agricultural fieldscape in a peri-urban setting within the 'Northern lowlands' landscape character type with a low sensitivity to change and a high compatibility rating for housing, urbanisation and infrastructure.

As a 'Key Development Areas' (KDAs) within the Maynooth and Environs Joint Local Area Plan 2025-2031, the proposed development will be seen as part of the future sustainable development of Maynooth town in conjunction with the future construction of the Maynooth Eastern Ring Road.

The landscape character will alter from an agricultural fieldscape in a peri-urban setting to a new residential neighbourhood of Maynooth with substantial green infrastructure and public open spaces. The retention of substantial sections of the eastern and northern hedgerows will assist in retaining part of the rural aesthetic of site.

Land and Soils

This chapter of the Environmental Impact Assessment Report (EIAR) was prepared by ROD and presents the land and soils assessment of the proposed construction of the Railpark, Maynooth development. It also identifies the characteristics, predicted potential impacts, mitigation measures and residential impacts arising from the proposed development in both the construction and operational phases.

Consultation was made from different sources, including the Geological Survey of Ireland (GSI) and the Environmental Protection Agency (EP) interactive maps and an available ground investigation report relevant to the area of study.

Existing receiving environment

The lands within the proposed development are predominantly flat, but they also show a small mound at the northeast of the site. The area to the west of the development is a residential area, whilst the rest of the areas are greenfields. No watercourses are found within the site boundary.

The topsoil layer within the site boundary is estimated to range between 0.25-0.6m, but is typically around 0.35m thick. The subsoil is predominantly glacial till, which is generally regarded as competent ground for civil engineering purposes, and its typical thickness is from 1.8 to 2.7m. Most of the soil found deeper than 1m below ground level is likely to have sufficient strength and stiffness values to serve as foundation levels for this type of development.

The bedrock geology is Limestone (typically Waulsortian) and it was encountered at depths of 2.7m and 4m in the ground investigations conducted to the north of the proposed site.

Two karst features (caves) are present approximately 2-3km to the northeast of the site. These types of features are the result of rock dissolution processes, typically associated with limestone rocks, that can lead to the creation of voids within the geological units and hence they are considered as a risk.

No geological heritage areas, quarries or mineral extraction points are found within the site or in the surrounding areas.

No indication of any presence of contamination was found within the site.

Potential impact of the proposed development to the soil and geology of the site

Removal of existing topsoil layer will be necessary practically across the entire area of study to facilitate construction of the development and to meet the final ground levels. Stripping of topsoil could lead to erosion of the subsoil and produce sediment laden runoff. The total amount of topsoil estimated to be excavated is 55,930m^3, 22,766m^3 of which is to be reused on site while the rest will need to be disposed of. A temporary slight negative effect is anticipated.

Subsoils excavation (approximately 55,900m^3) will be required to facilitate the construction of foundations for the housing and apartments, landscaping, installation of services and modification of existing ground levels to meet design levels. A portion of the excavated subsoils will be suitable for reuse throughout the site (estimation of 30,200m^3) while the rest will need to be disposed of. These amounts have been assessed based on the available ground investigation information, considering the depth of the excavation and the area of the site.

Any subsoil which is unsuitable for reuse will be removed from the site to be disposed of and will be subject to EPA licensing, except in the case where it is deemed suitable for landscaping purposes.

Fill material (approximately 103,250m^3) will be needed for backfilling over structural foundations, utility/service trenches, under proposed roads and for reaching design ground levels. 73,050m^3 of imported fill material have been estimated to be required for the development construction.

Given the relatively shallow excavations involved in this project only a slight negative effect is envisaged.

No excavation of rock is considered probable due to the shallow excavations involved in this project.

Given the need for supplying different types of construction materials a large amount of construction traffic is envisaged. Construction vehicles and plant could deteriorate the exposed subsoil layers after topsoil stripping. This could generate sediment laden run-off and mud may be deposited onto nearby roads used for access. Nonetheless, no adverse impacts on the existing quality of the subsoil is envisaged upon completion of the works and therefore only a short term slightly negative effect on subsoil surfaces is anticipated.

Any potential accidental spills and leaks may cause contamination of the topsoil, subsoil, bedrock or groundwater underlying the site. The existing type of subsoil (mostly firm-stiff cohesive glacial till) may limit the potential for infiltration of contaminants such as oils, fuels, cement and concrete.

Human health risks could arise during construction activities to personnel on site. These risks include contact, ingestion or inhalation of any possible dust generated, accidental spills / leaks of hydrocarbons / oils.

Landscaping and road surface areas within the development will protect the soils from exposure and erosion. Stormwater collection will prevent concentrated run-off from eroding existing soils or causing contamination. As a result, the day-to-day operational activities of the completed development are unlikely to have any direct impact on the soils or in the groundwater environment.

Potential cumulative impacts

Potential cumulative impacts are not anticipated, provided that current and future adjacent projects are subject to EIA and/or planning conditions which include appropriate mitigation measures to minimize impacts on the land, geological and hydrogeological environment. Any potential cumulative impacts will be limited to the construction stage and will therefore be temporary and short-term in duration.

Do nothing impact

If the proposed housing development did not proceed, there would be no impacts on existing land, soils or geology. However, as another project (MERR project) is likely to commence construction in the near future and passes through this location, some areas of the site's land and soils will be disturbed.

Avoidance, remedial and mitigation measures

Mitigation measures can be implemented since the design phase of the project by adopting design levels that minimise the cut/fill earthworks and the volume of material to be disposed of. Information from previous ground investigations should be compared to the nature of the excavated soils to ensure the design assumptions meet the findings from the site. Also, among other measures, landscaping works should be designed to protect the soils on the site from weathering and erosion.

During the construction phase a list of mitigation measures should be included in a Construction Environmental Management Plan (CEMP). This list should include, among many other measures, to protect the topsoil stockpiles for the duration of the works to prevent them from sediment laden runoff entering watercourses, ensuring topsoil is reused throughout the development in landscaping and public open spaces, and all fuels, oils paints and any other chemicals to be stored in a secure hardstanding area.

During the operational phase mitigation measures should include ensuring regular maintenance of site services, SuDS features, such as SuDS basin, and attenuation systems, such that they operate as designed.

Monitoring

Construction phase monitoring relates to the good maintenance of the mitigation measures. Soil removed during the construction phase is to be monitored to maximise potential for re-use on site. Monitoring of any hazardous material stored on-site will form part of the proposed Resource Construction Waste Management Plan. Some of the monitoring measures during construction include the inspection of fuel / oil areas, monitoring of contractor's stockpile management, monitoring sediment control measures, etc..

The mitigation measures to be implemented at the proposed development will ensure that the proposed development's impact on land and soils during construction phase will be short-term and slightly negative.

HYDROGEOLOGY

The Hydrogeology chapter of the EIAR was prepared by Roughan O'Donovan (ROD) Consulting Engineers. The chapter assesses and evaluates the impact of the proposed development on the underlying groundwater body / aquifer during the construction and operational phases of the proposed development.

The Source-Pathway-Receptor (SPR) model was used to determine the level of risk environmental impacts on hydrogeological receptors arising from the proposed development. Potential impacts of the proposed development on the hydrogeological environment have been assessed for the construction and operational phases.

The proposed development was considered in terms of its potential as a source of impact on groundwater levels, flow directions and chemical quality.

Application of the S-P-R identified the hydrogeological receptors listed below:

- A locally important bedrock aquifer;
- A Groundwater Dependent Terrestrial Ecosystem (GWDTE) located 1.2 km northeast of the proposed development site boundary;
- 24 private boreholes and wells within 2 km of the proposed development site.

These receptors have been identified using the EPA's Water Framework Directive geodatabase and hydrogeological and geological data available from the Geological Survey Maps and Data website. NPWS records have been reviewed to identify ecological receptors. Teagasc soils maps have been used to characterise the drift geology within the study area and these records have been supplemented with data produced by ground investigations close to the proposed development site. Borehole logs and ground investigation data have been used to develop a conceptual site model that has been used in identifying sources impacts on the hydrogeological environment associated with the proposed development and to characterise pathways between the development site and receptors.

The site is underlain by limestone bedrock that is classified as a local important aquifer that is productive only in local zones. The aquifer is assessed as being the principal receptor of hydrogeological impacts from the proposed development. The bedrock aquifer forms part of the Dublin Groundwater Body (GWB).

The Water Framework Directive (WFD) status of the GWB is classified as good under the latest River Basin Management Cycle.

Construction Phase

The EIAR has determined that excavation and sub soil removal associated with construction and landscaping activities are unlikely to significantly impact recharge rates to the underlying bed rock aquifer due to the presence of low permeability, unsaturated cohesive soils overlying the bed rock aquifer, and the thickness of these soils relative to the anticipated depth of excavations.

The risk of impacts on the aquifer from fine sediments contained in surface run-off infiltrating into the aquifer during the construction phase have been assessed as being of temporary duration and of slight magnitude. The hydrogeology chapter of the EIAR includes the avoidance and mitigation of these impacts.

Surface run-off contaminated with hydrocarbons or chemical spillages generated during the construction phase have been identified as a potential source of impact on water quality within the aquifer. Such discharges could result in temporary localised impacts on groundwater quality at the development site. Given the nature of the soils on the site and the likely duration of the construction phase impacts from contaminated runoff from the site have been assessed as being unlikely to significantly impact water quality in the groundwater aquifer as a whole. Best-practice measures to avoid and minimise these impacts risks have been detailed in Chapter 8 of the EIAR.

Significant dewatering of excavations during the construction phase are not anticipated. Removal of topsoil at the site are likely to increase infiltration rates into the underlying aquifer locally. The EIAR has concluded that the effects of construction phase activities on local groundwater flow paths and recharge will not significantly impact groundwater levels or flow directions within the underlying aquifer.

The potential for groundwater contaminated by construction activities to impact water quality groundwater wells in the vicinity of the site has been assessed as negligible due to the physical properties of the pathways between surface contamination and the aquifer and the hydraulic characteristics of the aquifer itself.

Operational Phase

The proposed development will introduce sources of diffuse urban pollution to groundwater quality at the development site that are not currently present as the location. These include:

- Surface water runoff generated from impermeable areas including roofs, access bays and parking areas.
- Leaks from service pipes.
- Surface runoff contaminated with hydrocarbons from roads and parking bays represent risks to water quality within the aquifer.

The risk of contaminants from these sources reaching groundwater has been assessed as negligible due to nature of the soil cover on the site and the incorporation of a Sustainable Urban Drainage (SUDS) management train into the design of the surface drainage network. Consequently, the EIAR has concluded that the impacts of the operational phase on water quality on within the aquifer as being of imperceptible magnitude.

The development will result in significantly increased hard standing relative to current land use at the site. The increase in impermeable surfaces will reduce the groundwater recharge rates locally has the potential to reduce recharge to the aquifer and alter local groundwater flow paths. As the soils on site are unsaturated and have moderate permeability the impact of the increase in hardstanding quantify of water and flow directions within the aquifer has been assessed as being of imperceptible magnitude, hence impacts on production at water supply wells in the area have been assessed as unlikely.

WATER

The Water chapter of the EIAR was prepared by Roughan O'Donovan (ROD) Consulting Engineers. The chapter assesses and evaluates the potential impacts of the development on the water, hydrological and hydrogeological environment.

The Source-Pathway-Receptor (SPR) model has been used to determine the level of risk to surface water receptors adjacent to or hydraulically connected to the proposed development. Potential impacts of the proposed development on the surface hydrological environment have been assessed for the construction and operational phases.

The proposed development was considered in terms of its potential to act as a source of impact on sediment transport, water quality and flow regimes in surface water courses. Receiving water courses (Receptors) have been identified by proximity to the site, and the characteristics of hydraulic pathways between the proposed development site and receptors. The location of Receptors has been identified using the EPA's Water Framework Directive geodatabase, examination of Ordnance Survey of Ireland 6" map series for the area. Surface modelling of Digital Elevation Model (DEM) Data has been used to identify surface runoff pathways.

The S-P-R model identified the following surface waterbodies as principal hydrological receptors potentially impacted by the proposed development:

- The Rye Water River waterbody
- Lyreen River waterbody. The Lyreen is a minor tributary of the Rye Water that flows through Maynooth and has been modified by towns historic development. There are no significant overland flow pathways exist between the proposed development site and the Lyreen.
- The Royal Canal Artificial Waterbody. The Royal Canal bounds the site to the northeast. There are no direct overland flow paths between the development site and the Royal Canal.

Construction Phase

The construction phase of the of the proposed development will potentially act as a source for the following environmental impacts on the hydrological environment:

- Increased sediment loads due to excavations and landscaping works.
- Accidental discharges of oils, fuels or construction chemicals.

The EIAR has concluded that the hydraulic pathways between the proposed development site and local waterbodies do not have the capacity to transfer these sources to the hydrological receptors, hence the construction phase of the project does not represent a source of impact on the local hydrological environment. Best practice measures to control run-off and reduce the risk of accidental discharges have

been detailed in the Construction Environmental Management Plan (CEMP) and in the main EIAR chapter.

Operational Phase

The proposed development will result in an increase in impermeable area locally which has the potential to increase surface run of volumes and flow rates following rainfall events.

The proposed surface water drainage network includes Sustainable Urban Drainage System (SUDS) components in a management train designed to restrict discharges from the development to the equivalent greenfield runoff rate for the catchment area. The surface water management network has been designed to provide sufficient capacity to contain and convey all surface water runoff associated with the 1 in 100-year flood event without any overland flooding. The SUDS management train has been designed to treat water contamination associated with access roads and parking areas and no significant impacts on water quality or the hydrological regimes of the receptors have been identified.

Due to the physical characteristics of the drainage network locally, the discharge controls, and treatment components within the SUDS management train increased run-off due to the proposed development will not significantly alter the local hydrological environment from pre-development baseline conditions.

The proposed development will result in increased demand on Maynooth's water supply system. The sources for Maynooth's water supply are two reservoirs located outside of the study area and there are no abstractions that would impact the local hydrological environment.

The existing foul sewer system in Maynooth transfers sewage to the Leixlip Wastewater Treatment Plant (WWTP). The treated sewage is subsequently discharged to the Liffey River. Consequently, there are no predicted impacts on the local environment associated with increased volumes of sewage associated with the proposed development, noting the upgrades planned by Uisce Eireann for the area.

No significant impacts to the hydrological environment are predicted during the construction or operational phases of the proposed development.

AIR QUALITY

The air quality chapter examines the potential for the Proposed Development to affect air quality within the vicinity of the site. This assessment was undertaken by DNV, who evaluated potential effects and informed the identification of appropriate mitigation measures.

A construction phase dust assessment has been carried out in accordance with the Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction (2024). The risk of dust impacts has been assessed separately for earthworks, construction and trackout and the dust emission magnitude has been classified for each of the three activities (this is known as 'Step 2A' of the dust assessment), using the definitions outlined for each activity within the Institute of Air Quality Management (IAQM) guidance. The dust emission magnitude is based on the scale of the anticipated works and is classified as small, medium and large. The sensitivity of the area was determined for dust soiling and human health impacts, respectively, as per the guidance (this is known as 'Step 2B' of the dust assessment). In accordance with the Institute of Air Quality Management (IAQM) guidance, the dust emission magnitude (Step 2A) and sensitivity of the area (Step 2B) have been combined and the risk of impacts from demolition, construction, earthworks and trackout have determined (before mitigation is

applied) (this is known as 'Step 2C' of the dust assessment). This risk has then been used to inform the selection of appropriate mitigation measures.

Table 3 details the risk of dust impacts for earthworks, construction and trackout activities.

Table 3: Summary of Unmitigated Risks

Potential Impact	Sensitivity	Magnitude Earthworks Large	Construction Large	Trackout Medium
Dust Soiling Impacts	High	High Risk	High Risk	Medium Risk
Human Health Impacts	Low	Low Risk	Low Risk	Low Risk
Ecological Impacts	Not applicable – no ecological receptors within study area.			

The Institute of Air Quality Management (IAQM) recommends that significance is only assigned to effect after considering the construction activity mitigation. The risk of dust impacts has been determined in Step 2C and the appropriate dust mitigation measures identified, and the final step is to determine whether there are significant effects arising from the construction phase of the Proposed Development. The proposed mitigation measures will reduce the effects to be not significant.

Assessment of Specified Infrastructure Projects – PE-ENV-01106 (TII, 2022), states that road links meeting one or more of the following criteria can be defined as being 'affected' by a Proposed Development and should be included in the local air quality assessment. While the guidance is specific to infrastructure projects the approach can be applied to any development that causes a change in traffic.

- Annual average daily traffic (AADT) changes by 1,000 or more;
- Heavy duty vehicle (HDV) AADT changes by 200 or more;
- Daily average speed change by 10 kph or more;
- Peak hour speed change by 20 kph or more; or
- A change in road alignment by 5m or greater.

The construction stage traffic will not change by more 1,000 AADT or 200 HDV AADT and does not meet the above scoping criteria. As a result, a detailed air assessment of construction stage traffic emissions has been scoped out from any further assessment as there is no potential for significant effects to air quality.

It can be determined that the construction stage traffic will have a *direct, short-term, negative* and *imperceptible,* i.e., not significant, effect on air quality and human health, which is overall not significant in EIA terms.

Operational phase traffic associated with the Proposed Development has the potential to affect local air quality due to increased vehicle movements. The TII scoping criteria were used to identify affected road links, resulting in a detailed air quality modelling assessment for two road links where traffic is expected to increase by more than 1,000 AADT.

The impact on air quality due to changes in traffic was assessed at sensitive receptors near these roads. Modelling was conducted for NO_2, PM_{10}, and $PM_{2.5}$ concentrations for the Opening and Design Years

under both Do Nothing and Do Something scenarios using the TII Road Emissions Model (REM) online calculator tool.

Inputs for the REM tool included receptor locations, annual average daily traffic movements for light and heavy-duty vehicles, traffic speeds, road link lengths, road type, project county location, and pollutant background concentrations. The Default fleet mix and Intermediate Case fleet data were selected, assuming a balance between current vehicle ownership trends and the adoption of low emission vehicles.

The model predicted road traffic contributions to ambient ground level concentrations at sensitive receptors using generic meteorological data. It incorporated county-based Irish fleet composition, European emission standards, and emission factors for PM_{10} from brake and tire wear. Predicted road contributions were added to existing background concentrations to determine ambient concentrations, which were then compared with relevant air quality standards to assess compliance.

Overall, the TII significance criteria have identified neutral impacts due to increases in NO2, PM10 and PM2.5 annual mean concentrations which are less than 5% of the annual mean ambient air quality standards (and the annual mean concentrations are less than 75% of the air quality standard). This equates to a potential effect of the Proposed Development on ambient air quality, and human health, in the operational stage according to the EPA guidelines (EPA, 2022) which is considered *direct, long-term, negative* and *not significant*.

In addition, concentrations of NO_x and NH_3, as well as nitrogen and acid deposition levels, were assessed at designated ecological sites. All predicted values were below or within relevant critical levels and loads, indicating no significant ecological impact from operational traffic emissions.

In terms of dust, no significant effects are predicted; good construction practice, which incorporates the implementation of the identified mitigation measures, will be employed at the site.

Assessment of road traffic emission impacts on air quality involved traffic data which is inclusive of traffic associated with other existing and permitted developments on the road networks surrounding the site. Therefore, cumulative effects have been assessed in this regard and the effect on ambient air quality has been determined as not being significant.

It is considered that the cumulative effect will be ‘short-term’, ‘imperceptible’ and ‘negative’, i.e., not significant.

No negative residual effects in the context of air quality are anticipated regarding the Proposed Development.

CLIMATE

The Climate chapter was prepared by DNV Consulting and assesses the potential impacts of the proposed development on greenhouse gas emissions and the resilience of the scheme to the effects of climate change. The assessment has been carried out in line with Environmental Protection Agency guidance and the obligations set out under the Climate Action and Low Carbon Development (Amendment) Act 2021 and Climate Action 2024 and 2025.

During the construction phase, greenhouse gas emissions will arise primarily from embodied carbon in building materials, energy use on-site, and the transport of construction traffic. These emissions will be temporary and occur only over the duration of the works. Best practice measures will be implemented, including careful management of materials, efficient use of plant and machinery, and minimisation of construction waste. With these measures in place, the impact of construction on climate will not be significant.

In the operational phase, the main sources of emissions are associated with energy consumption in buildings and transport use by residents. The scheme has been designed to a high energy performance standard, consistent with Nearly Zero Energy Building (NZEB) requirements, and will incorporate fabric efficiency, low-carbon heating systems, and renewable energy technologies. Provision for extensive cycle parking, high-quality pedestrian connections, and access to public transport will support sustainable travel and reduce car dependency. These measures will help limit transport-related emissions relative to conventional suburban development.

The development has also been assessed in terms of climate resilience. The design incorporates Sustainable Drainage Systems (SuDS), green infrastructure, and planting that contribute to surface water management, reduce urban heat island effects, and enhance biodiversity. The site is not at risk of flooding, and the drainage strategy has been designed to manage more intense rainfall events that may arise under future climate scenarios.

The daylight and sunlight and microclimate / wind impacts of the proposed development are separate to the Climate Chapter of the EIAR and are addressed in separate standalone reports accompanying the application.

Overall, while the project will generate greenhouse gas emissions during its construction and operation, these are considered to be imperceptible to slight in significance and not material in the context of Ireland's binding emission reduction targets. The measures embedded in the design will ensure that the development is resilient to the predicted effects of climate change. No additional mitigation is required beyond the measures already integrated into the scheme.

NOISE AND VIBRATION

The noise and vibration chapter of the EIAR has been prepared by Wave Dynamics Limited, an Acoustic Consultancy specialising in noise and vibration, and assesses the potential noise and vibration impact of the proposed development at Railpark, Maynooth, Co. Kildare.

The assessment considers the noise and vibration impact of the short-term construction phase and the long-term operational phase on the surrounding environment.

Under the Do-Nothing scenario, the prevailing noise environment at the closest noise and vibration sensitive locations will remain in line with those measured during the baseline study and hence will be of neutral effect in terms of noise and vibration impact

Construction Phase

For the construction phase the cumulative noise impact from construction was assessed based on a worst-case scenario i.e. all plant and equipment operating simultaneously. The noise sensitive locations were considered in each direction from the site and their proximity to the construction works. The

cumulative noise impact from construction noise was predicted at each noise sensitive location. The cumulative noise impact from the construction activities without mitigation was predicted not to comply with the project criteria. Mitigation measures have been specified to control the noise and vibration impact from construction activities. This includes the use of screening via hording, low noise plant and construction noise and vibration monitoring.

Vibration from construction activities was considered. The main source of vibration during the construction will be the piling which is a potential part of the construction methodology. It is not anticipated that the vibration will have a negative impact on the sensitive receptors, however, precautionary vibration monitoring will be carried out during the construction period to ensure any potential vibration impact is controlled. Vibration limits from the construction phase have been set for the development for the purposes of monitoring the vibration impact.

Operational Phase

For the operational phase the main sources of noise is plant and equipment, traffic movements, car parking, creche play area, and external/public amenity spaces. The additional traffic generated during the Do-Something scenarios is predicted to lead to an increase in the range of 1dB at some sensitive receptors, this is an imperceptible magnitude of change as detailed in DMRB guidance.

There are no predicted vibration sources during the operational phase, therefore, mitigation measures are not required to control operational phase vibrations.

Cumulative Impact

The assessment indicates that the Proposed Development, when considered alongside other major projects in the surrounding area, which have been summarised below, is unlikely to cause significant adverse noise or vibration effects on the surrounding environment.

Maynooth Eastern Ring Road (MERR)

The construction of the MERR is expected to overlap with the proposed development's construction phase. While the MERR has higher noise limits (70 dB(A) Leq) than the proposed development (65 dB(A) Leq), the logarithmic nature of noise propagation means no significant cumulative noise impact is expected. Similarly, no significant cumulative vibration impact is anticipated due to the separation distance and the use of mitigation measures. The MERR's operation will likely increase background noise levels, but the current assessment is based on existing conditions, representing a worst-case scenario.

High Degree Developments (Reg. Refs. 21155 and 21156)

The two phases of this residential development (Reg. Refs. 21155 & 21156) may have overlapping construction periods with the proposed project, which could lead to temporary cumulative noise and vibration impacts on nearby sensitive areas. However, these impacts are expected to be limited due to the temporary nature of construction and the implementation of mitigation measures. Once operational, both the proposed and adjacent developments are residential, so no significant cumulative noise or vibration effects are anticipated.

Parklands Grove (Reg. Ref. 211108)

This residential development is approximately 600m away, so there is no anticipated cumulative noise or vibration impact during the operational phase due to the natural attenuation of sound over distance. There is potential for cumulative effects during construction because both projects share nearby receptors.

However, these effects are expected to be temporary and will be minimized by implementing the specified mitigation measures.

Doctors Lane (Reg. Ref. 2461139)
Given the distance of approximately 1km between this development and the Proposed Development, there are no predicted negative cumulative noise and vibration effects during either the construction or operational phases.

St. Mary's Church (Reg. Ref. 2460774)
Due to the significant distance of approximately 1.5km between the two sites, no negative cumulative noise or vibration impacts are anticipated during the construction or operational phases.

Mitigation
Mitigation measures for construction noise include, using low noise equipment, controlling noise at the source with temporary screens, erecting site hoarding, temporary noise barriers, public engagement and noise monitoring at the closest sensitive receptors.

Mitigation measures include vibration monitoring at the closest sensitive receptors during the substructure stages of construction when piling operations are likely to occur.

Inward Noise Impact
A risk assessment for the Proposed Development site has been carried out and it has been categorised as a medium risk for noise. This rating indicates that while the site presents some acoustic challenges, it's considered sound for residential development as long as proper acoustic design is implemented.

The acoustic design process followed a multi-faceted approach to achieve ideal noise conditions both inside and outside the buildings. This involved a full assessment that considered several factors. As the noise sources (road and rail) could not be relocated or reduced, the design focused on the site layout, building orientation, and construction methods. The eastern boundary, which faces the proposed MERR ring road, was identified as the most exposed area.

To address the noise, the design includes specific construction methods for the building's envelope, including the walls, roofs, windows, and ventilation. Glazing performance requirements and attenuated ventilation are proposed to ensure internal noise levels meet the criteria, as providing ventilation through open windows isn't practical.

The chapter also assessed external amenity spaces such as gardens and balconies. While some balconies facing the MERR ring road are predicted to exceed the desired noise levels, the presence of alternative private balconies, as well as communal gardens and open spaces, ensures residents have adequate of compliant outdoor areas.

Finally, the chapter addresses other relevant issues, confirming that the development complies with national and local policies, adheres to the ProPG guidance, and considers the needs of future occupants while balancing acoustic design with wider planning objectives. Overall, the assessment concludes that the development meets the required internal noise standards and provides adequate external amenity spaces by following the recommended acoustic design principles.

Monitoring

Based on the predicted noise and vibration levels during the construction stage, noise and vibration monitoring will be implemented to monitor and control the noise and vibration emissions of the construction phase and to protect the surrounding sensitive receptors.

Based on the predicted noise levels of the development in operation there is no noise or vibration monitoring required during the operational phase of the development.

TRAFFIC AND TRANSPORT

This Chapter presents the traffic and transport assessment of the proposed construction of the Residential Development at Railpark Maynooth. This report assesses and evaluates the impact of the proposed development on the surrounding traffic flow, traffic safety and transport infrastructure during the construction and operational phases in terms of vehicular, pedestrian and cycle access. The approach to this assessment accords with policy and guidance both at a national and local level. Hence, the adopted methodology responds to best practices, current and emerging guidance which is exemplified by a series of publications which advocate the adopted method of analysis.

The subject site located at Railpark, Maynooth, is adjacent to an existing residential development immediately west of the site. The lands are currently greenfield bounded by existing hedgerows/vegetation to the north, south, and east. Pedestrian footpaths within the existing residential estates are well maintained and well connected to each other. The surrounding road network includes the R148 Leixlip Road and is currently a single-lane carriageway with a posted speed limit of 60km/hr in the vicinity of the existing R148/R157 junction. This speed limit is increased to 80km/hr beyond the eastern extent of the proposed development boundary. The R148 link to Leixlip to the east and Maynooth to the west. The R405 is currently a single-lane carriageway with a posted speed limit of 50km/hr in the vicinity of the R405 / Griffin Rath Manor junction and this limit is increased to 80km/hr approximately 110m east of the junction. The R405 links to Celbridge to the east and Maynooth to the west. Located further south of the proposed development is the M4 motorway which the primary route connects Dublin to the west of Ireland. From the proposed development the M4 can be accessed via the R405 and the R406.

The proposed Maynooth Eastern Ring Road (MERR) will be located to the east of the site. This will be the primary access point to the proposed development. A secondary site access is also provided via a new T-junction on the MERR on the south side of the site. The Maynooth Eastern Ring Road is proposed to be a single carriageway comprising two 3.5m wide lanes for the majority of the length with lanes narrowing to 3.0m at the approach to the junctions. It will have a posted speed limit of 50km/hr and the curved alignment of the road will assist in reducing speed, thus increasing safety. The MERR will tie into the R148 / R157 junction to the north with the provision of a new 4-way signalised junction. To the south, the MERR will tie into the R405 / Griffin Rath Road junction with the provision of a new 4-way signalised junction. The MERR will also provide pedestrians and cyclists dedicated cycle tracks and pedestrian footpaths on both sides of the road for the entire length of the road. The MERR will be fully open prior to the occupation of the proposed development.

The proposed development will be fully accessible for pedestrians, cyclists, and the mobility impaired and disabled. The main access point will be from the new Maynooth Eastern Ring Road which will have accessibility for pedestrians and cyclists with crossing facilities. There is also a potential future pedestrian/cycle link northwest of the proposed development to the existing Parklands neighbourhood.

This will improve permeability and providing a shortcut to public transport services at Maynooth Station and buses at Straffan Road. Pedestrian and cycle facilities within the site will be provided in accordance with the Design Manual for Urban Roads and Streets [DMURS]. The proposed development provides for permeability connections to Parklands and Rockfield, subject to delivery by the Planning Authority / Others.

The proposed site is accessible by bus. Bus services along Straffan Road are approximately 5 minutes' walk from the proposed site.

As part of the BusConnects programme, it is proposed to further enhance the number of bus services to the area with additional capacity and increased frequency. The following BusConnects route will serve Straffan Road and the R405:

- C3: Maynooth – Rignsend, serving Straffan Road
- X25: Mynooth to Merrion Square, serving Straffan Road
- X26: Maynooth – UCD (via City Centre), serving Straffan Road
- W6: Maynooth – Tallaght, serving R405

The Maynooth Train Station is within 20 minutes of walking distance from the proposed development. It is served by the Commuter Service and Intercity Service. The Commuter Service runs between Dublin Connolly Station and Maynooth with a frequency of 15-30 minutes. The Intercity Service runs between Dublin Connoly Station and Sligo with a frequency of 2-3 hours.

A public transport capacity assessment was conducted for the proposed development. It assessed the level of spare capacity in the existing public transport network serving the Railpark, Maynooth site. The existing spare capacity on the key bus routes was determined from surveys. The anticipated generated public transport trips from the Railpark site were added to existing demand to determine the future bus spare capacity in the immediate area of the site. The Annual Rail Census data showed that the anticipated generated increase in daily rail passengers from the site to Maynooth Station only represents six months typical growth from the station. The analysis, when combined with NTA's planned Core Bus Corridor upgrade and DART+ proposals, lead to the following key conclusions.

- The surveys of bus services showed significant existing levels of spare capacity in the bus network in the morning peak period.
- The new demand for bus usage predicted in the TIA arising from the proposed development is insignificant and can be met by the current bus routes and increased frequencies already introduced in the BusConnects network of C-Spine bus services.
- The rail demand analysis from the NTA Rail Census 2024 shows growing usage from Maynooth Station, primarily on Commuter Rail services. The anticipated generated rail trips from the Railpark development, as identified in the TIA, only equates to less than six months of the steady growth in rail patronage in recent years and well within the capacity of the Maynooth service.
- Future residents of the Railpark development site are well positioned to benefit from the newly introduced BusConnects network and the planned capacity increases of the DART+West rail scheme.

The Public Transport Capacity Assessment confirms that the proposed development can easily be absorbed by the adjacent public transport network of services.

During the construction phase, all construction vehicles accessing and egressing the site will do so from the MERR. The predicted construction HGV and staff vehicle generation levels are lower than those predicted during the operational stage. The impact at construction stage is predicted to be imperceptible to not significant and therefore lower vehicular traffic generated at construction stage is predicted to have a lesser impact compared to the operational stage.

Vehicle movements during construction will ultimately depend on the construction approach, methodology and sequencing of the main contractor. Details of the proposed vehicle movements during construction will be identified within the finalised Construction Environmental Management Plan (CEMP) which will be agreed with KCC prior to the Construction phase and commencement of the works.

For the operational phase of the proposed development, the existing up to date local road networks traffic characteristics was established and subsequently to enable the identification of the potential impact by the residential development. Traffic surveys were undertaken at two key junctions at the R148/R157 junction and R405/Griffin Rath Manor junction.

To estimate the potential levels of vehicle trips that could be generated by the proposed residential development reference has been made to the TRICS trip generation database.

Based on this the proposed development is predicted to generate 306no. Tow-way vehicle trips in the AM peak hour and 278no. Two-way vehicle trips in the PM peak hour.

The two junctions mentioned above have been assessed using TRL Junction10 and LinSig.v3 under the following scenarios:

1. Baseline Year 2024
2. Estimated Opening Year 2030 (With and Without Development)
3. Opening Year +5 2035 (With and Without Development)
4. Opening Year +15 2045 (With and Without Development)

Junction analysis for both junctions at R405/Griffin Rath Manor and R148/Dunboyne Road indicate that both junctions can operate within their respective capacities and can accommodate the projected traffic growth in 2045, and the projected traffic associated with the proposed development.

The primary site entrance and MERR junction has also been assessed using LinSig.v3 for the opening +15 2045 with development scenario. The junction analysis indicates the primary site entrance / MERR junction can operate within capacity and can accommodate the projected growth in 2045, and the projected traffic associated with the proposed development.

A Mobility Management Plan has been prepared and has been included in the Traffic Impact Assessment report which accompanies this application. The MMP indicates measures that will be implemented by the management company to promote more sustainable forms of transport to staff/ visitors of the proposed development.

It is considered that there will be no significant effects on surrounding traffic or transportation from the construction and operation of the proposed development.

MATERIAL ASSETS

Material Assets considers physical resources in the environment which may be of human or natural origin. The objective of the assessment is to ensure that these assets are used in a sustainable manner, so that they will be available for future generations, after the delivery of the proposed development.

In accordance with the 2022 EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, "*Material assets can now be taken to mean built services and infrastructure*". Material assets of a natural origin are dealt with comprehensively within the other chapters of the Environmental Impact Assessment Report.

The Material Assets chapter as a whole describes existing services to the application site and describes the predicted impacts which the development may have on these services and finds that there is adequate capacity for the proposed development.

This chapter considers the key aspects relating to material assets of a human origin of the proposed development site and the surrounding area, namely waste, potable water supply, wastewater discharge, electricity and gas supply and telecoms. Traffic and transportation are dealt with separately in the preceding chapter of the EIAR.

The Material Assets chapter sets out that no significant residual impacts are expected to occur during the construction phase, subject to the implementation of mitigation measures.

During the operational phase of the development, a positive impact on the existing urban environment is predicted via the development of greenfield lands for the purpose which they are zoned for, the provision of high quality housing and neighbourhood centre facilities to cater for the needs of a growing population and to meet existing demand, and the delivery of supporting open space and roads infrastructure, which will facilitate access to the planned schools campus. The development is not expected to precipitate any significant residual impact on other material assets examined in this chapter.

INTERACTIONS BETWEEN ENVIRONMENTAL FACTORS

The purpose of this chapter of the EIAR is to draw attention to significant interaction and interdependencies in the existing environment. John Spain Associates in preparing and co-ordinating this EIAR ensured that each of the specialist consultants liaised with each other as necessary and dealt with the likely interactions between effects predicted as a result of the proposed development during the preparation of the proposals for the subject site and this ensures that mitigation measures are incorporated into the design process. This approach is considered to meet with the requirements of Part X of the Planning and Development Act 2000, as amended, and Part 10, and Schedules 5, 6 and 7 of the Planning and Development Regulations 2001, as amended. The detail in relation to interactions between environmental factors is covered in each chapter of the EIAR and is reiterated within the interactions chapter, along with a table of interactions which visually represents the various interactions identified between environmental factors.

SUMMARY OF EIA MITIGATION AND MONITORING MEASURES

This chapter provides a summary of all the mitigation and monitoring measures proposed throughout the EIAR document for ease of reference for the consent authority and all other interested parties.