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1. NON-TECHNICAL SUMMARY

1.1 Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared by MKO on behalf of Kingston Stables Ltd (the Applicant), which intends to apply to Galway City Council (GCC) pursuant to the provisions of the Planning and Development (Amendment) (Large-scale Residential Development (LRD)) Act 2021, for permission in respect of a large-scale residential development located at Knocknacarra, Co. Galway.

The Proposed Development comprises a mix totalling of 133 no. residential units, open spaces and all other site related infrastructure. The Proposed Development site measures approximately 2.9 hectares (ha) and is located at Knocknacarra, County Galway which is approximately 3 kilometres (km) west of Galway City Centre.

The Proposed Development is a component of a larger residential development project (hereafter referred to as the Proposed Project). The Proposed Project involves the construction of 495 residential units together with associated infrastructure, open space and ancillary site development works and forms a substantial part of the Knocknacarra District Centre (South) Masterplan. This masterplan was extensively discussed and refined in collaboration with GCC. The master planning process, initiated in 2023 for the Knocknacarra District Centre (South) and the adjoining "Kingston lands" considered access, connectivity, permeability, and a balanced mix of uses across the broader area, ensuring that each subsequent application, including the present proposal, is informed by a cohesive and coordinated design framework.

A planning application for 362 no. residential units and associated infrastructure on lands immediately to the east of the Proposed Development site was submitted to GCC in October 2025 (Planning Reference Number: 25/60320). Permission was granted by GCC on the 9th April 2026 and the application is currently under appeal with An Coimisiún Pleanála (ACP) under Planning Reference Number: ACP-324237-26. This development is referred to throughout this EIAR as the LRD East.

The Applicant

The Applicant for the Proposed Development is Kingston Stables Ltd. The Applicant has extensive experience within the residential, retailing, commercial and hospitality industries having completed a multitude of medium and large sized projects in and around Galway. The client's main focus is developing innovative new developments in the west of Ireland.

Description of the Proposed Development

The Proposed Development will consist of the following:

- Provision of 133 no. residential units in 2 no. development areas with a mix of duplex and house types on a site area of 2.9 ha. The buildings range between 2 no. and 3 no. storeys in height. The development will comprise the following:
  - 51 no. 3-bed townhouses;
  - 6 no. 4-bed townhouses;
  - 1 no. 1-bed duplex apartments;
  - 1 no. 2-bed duplex houses;
  - 37 no. 2-bed ground floor duplex apartments;
  - 37 no. 3-bed duplex houses.
- Demolition of existing structures (388 m^2);

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- Vehicular access to the proposed development from a permitted road (Planning Reference 24/60370 refers);
- Upgrades to the permitted road (Planning Reference 24/60370 refers);
- Pedestrian and cycle access to the adjacent Kingston Park (ACP Ref: 323873);
- Conversion and upgrade of an existing structure to a cafe (65.8 m^2);
- The provision of public open space;
- The provision of 192 no. bicycle parking spaces;
- The provision of 143 no. car parking spaces;
- Public lighting, bin stores, signage, services, 2 no. ground mounted substation kiosks, site landscaping and all ancillary site development and enabling works.

Need for the Proposed Development

There is currently a significant shortage of housing units available to service the housing market (including the rental market) in Galway City and the surrounding areas. The rapidly increasing price of housing is a result of the shortage in supply, and many people will soon find themselves unable to afford a home. This problem is also aggravated by a lack of housing units available for the rental market. The Proposed Development will contribute significantly to alleviating the shortage of housing supply in Galway and brings into use lands zoned specifically for that purpose.

In addition, the construction industry, through projects such as the Proposed Development, makes a significant contribution to economic development in Ireland. There remains strong demand for housing in the Galway Metropolitan Area Strategic Plan (MASP) area, for which the Proposed Development will be able to provide. The Proposed Development will provide a significant supply of mixed residential units which will contribute towards the aim of growing the population of the Galway MASP in a sustainable manner in accordance with national, regional and local planning policy.

Purpose and Scope of the EIAR

The purpose of this EIAR is to document the current state of the environment in the vicinity of the Proposed Development site and to quantify the likely significant effects of the Proposed Development on the environment. The compilation of this document served to highlight any areas where mitigation measures may be necessary in order to protect the surrounding environment from the possibility of any negative effects arising from the Proposed Development.

It is important to distinguish the EIA to be carried out by GCC from the EIAR accompanying the planning application. The EIA is the assessment carried out by the competent authority, which includes an examination that identifies, describes and assesses in an appropriate manner, in the light of each individual case and in accordance with Articles 4 to 11 of the Environmental Impact Assessment Directive, the direct and indirect effects of the Proposed Development on the following:

a) *population and human health*
b) *biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC*
c) *land, soil, water, air and climate*
d) *material assets, cultural heritage and the landscape*
e) *the interaction between the factors referred to in points (a) to (d)*

1.2 Background to the Proposed Development

The Background to the Proposed Development chapter presents information on the strategic planning context for the Proposed Development, the site selection and design process, a description of the Proposed Development site and its planning history, the assessment of alternatives, scoping and consultation, and the cumulative impact assessment process.

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Under the Galway City Development Plan 2023-2029 (GCDP 2023-2029), the majority of the lands are zoned for '*R - Residential*' with a section zoned '*Knocknacarra District Centre (South) Opportunity Site,'* both of which are compatible with residential and commercial development use. A section of the development is on land zoned for *'RA - Recreation & Amenity'*. This pertains to the two pedestrian and cyclist access points to the adjacent Kingston Park (ACP Ref. 323873). The land uses outlined in Table 2.2 of Chapter 2 Background to the Proposed Development are deemed appropriate for 'R' zoned land and 'RA' zoned land.

The Proposed Development site is also partially located on lands identified as '*Knocknacarra District Centre (South) Opportunity Site'*. These lands have a number of specific development objectives associated with them as follows:

- *Include for a minimum of residential/residential commercial development of a scale equivalent to 50% of the development capacity of the site which shall be integrated into the overall scheme.*
- *Provide mixed uses which shall include for a number of small retail /service retail units which can be demonstrated to deliver a broad range of District Centre uses. This shall be assessed in the light of the scale and nature of uses delivered on the site at that period.*
- *Provide a good balance of use mixes, including uses which can include healthcare and primary health care, commercial leisure uses, hotel and educational uses, which would by virtue of their use and scale serve the needs of the surrounding neighbourhood area.*
- *Provide a strong frontage and address of the Western Distributor Road and internal street network with the avoidance of dead frontages.*
- *Provide quality pedestrian and cycle connections with the adjacent neighbourhood, schools, open space lands and wider green network.*
- *Demonstrate a structured hierarchy of spaces within the layout maximizing the opportunities for linkage with adjacent developments/future developments.*
- *Ensure pedestrian priority in the access network and accommodate public transport access or easy access to the public transport network and incorporating emerging bus route proposals along the Western Distributor Road.*
- *Demonstrate divisible viable phases of development.*
- *Having regard to investment in public transport and sustainable mobility measures, the level of car parking provision will be considered having regard to performance based standards, urban design, sustainability, location and scale of development proposed and should reflect the designated location being a multi-purpose trip destination.*
- *The site shall include for a civic open space/park which shall be reserved on any layout for this purpose and should be of a size and function to reflect the scale of the overall development and shall be over and above the requirement for open space on these lands.*
- *Each phase of the development shall include for the front loaded delivery of a public / community facility which can be in the form of a community facility, an educational establishment, a community health facility, a transport facility, a park and play area over and above normal open space requirements.*

A small portion of the Proposed Development site is located within the Knocknacarra District Centre (South) Opportunity Site. The portion of lands located within the Opportunity Site pertains to a roadway which is intended to connect the Proposed Development with the wider Masterplan site. The site-specific objectives are achieved through the development of the Masterplan site.

A scoping letter providing details of the EIAR Study Area and the Proposed Development, was prepared by MKO and circulated on 20th March 2026 in relation to this EIAR. These letters were sent to the agencies, Non-Governmental Organisations (NGOs) and other relevant parties listed in Table 2-3 of Chapter 2.

This EIAR also considers the potential for cumulative effects from the Proposed Development with other key existing, permitted or proposed projects.

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1.3 Consideration of Reasonable Alternatives

This chapter of the EIAR presents a description of the reasonable alternatives studied by the developer, relevant to the Proposed Development and its specific characteristics, including site location, layout, unit types, design, construction methods and the project's size and scale. A 'Do-Nothing Alternative' i.e., an outline of what is likely to happen to the environment should the Proposed Development not be implemented, has also been considered.

Alternative Locations

The lands comprising the site of the Proposed Development are available to the applicant for development and consideration of alternative sites which are not available to the applicant is not considered necessary or appropriate. During the design process for the Proposed Development, as set out below, several iterations of the site layout and alternative designs were considered. The documentation submitted with this planning application demonstrates that the subject site and the surrounding area have the environmental capacity to accommodate the Proposed Development without any significant impacts on the environment. The assessments presented in this EIAR conclude that the Proposed Development can be accommodated at the subject site without giving rise to significant adverse effects on the environment, subject to the implementation of the embedded design measures and mitigation measures identified in the relevant chapters. In conclusion, the Proposed Development location is the preferred location for the Proposed Development.

Alternative Design and Layouts

The following options were considered for the assessment:

- Stage 1 – Emerging Masterplan Principles: Development of a comprehensive masterplan for the wider Knocknacarra lands, incorporating considerations such as connectivity, transport, green infrastructure and neighbourhood designs.
- Stage 2 – Masterplan and Phasing Strategy: Identification of the site as a suitable location for residential development within a phased masterplan approach. This stage established the delivery of the wider development through Phase 1 (LRD East) and Phase 2 (the Proposed Development).
- Stage 3 – Finalised Layout: The final layout forms Phase 2 (Proposed Development) of the masterplan and provides 133 no. residential units together with associated infrastructure, open space, landscaping, pedestrian and cycle connections, and access arrangements integrated with the permitted Phase 1 (LRD East).

The final layout reflects an iterative design process that sought to optimise connectivity as well as feedback from the various stage meetings with GCC as well as site-specific constraints.

Alternative Mitigation Measures

Mitigation has been developed iteratively alongside the design of the Proposed Development. Where practicable, potential effects have been avoided through design, including the siting and layout of development, retention and enhancement of ecological features, coordination of drainage and SuDS infrastructure, provision of open space, and integration of pedestrian and cycle connections. Where effects could not be avoided through design, measures were developed to reduce and manage those effects during construction and operation. Alternative mitigation approaches were considered by the relevant specialists where appropriate, with the measures presented in this EIAR selected having regard to their effectiveness, practicability and consistency with good practice.

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1.4 Description

The site is located within the townland of Knocknacarra and is approximately 3 kilometres (km) west of Galway City Centre. Irish Transverse Mercator (ITM) coordinates for the centre of the site are X 526577, Y 724658.

The Proposed Development site measures 2.9 ha. The site comprises a mixture of low input agricultural grassland in the southern section as well as areas of hardstanding, stonewalls, hedgerows and agricultural buildings in the northern section. The surrounding area is urban in character, with several residential housing estates, as well as commercial buildings.

Construction access will be provided via Altán Road to the north of the site, which connects to the Western Distributor Road.

Construction Management

The construction of the Proposed Development will take approximately 36 months to complete.

Normal construction working hours for the development and the concurrent works will be:

- 8am - 6pm, Monday to Friday;
- 9am - 1pm, Saturday; and
- Sunday and Public Holidays - no working

A Construction Environment Management Plan (CEMP) has been prepared which includes details of waste management and clearly outlines the mitigation measures and monitoring proposals that are required in order to complete the works in an appropriate manner. Routine inspections of construction activities will be carried out throughout the construction phase.

Construction Methodology

The construction methodology will involve the following main stages:

- Site Establishment
- Perimeter Fencing
- Demolition Works
- Site Excavation
- Traffic Measures and Junction Upgrade Works
- Proposed Site Roads and Footpaths
- Services and Utilities
- Residential Unit Construction
- Landscaping Works

Management of Construction Phase Activities

All proposed construction activities on the site of the Proposed Development are outlined in the CEMP (Appendix 4-1). Mitigation measures will be implemented to manage water quality, dust, noise, vibration and traffic.

Operational Phase

Once operational the Proposed Development will provide 133 modern and energy efficient residential units.

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The Proposed Development will require periodic maintenance throughout the operational phase. During the operational phase the Proposed Development will include SuDs, Sustainable Energy Use in the form of Demand Control Ventilation, LED lighting and heat pump systems.

1.5 Population and Human Health

One of the principal concerns in the development process is that people, as individuals or communities, should experience no diminution in their quality of life from the direct, indirect or cumulative effects arising from the construction, operation and decommissioning of a development. Ultimately, all the effects of a development impinge on human beings, directly and indirectly, positively, and negatively. The key issues examined in this section of the EIAR include population, employment and economic activity, land-use, tourism, human health and vulnerability of the project to natural disasters and major accidents.

The study area is defined in terms of Electoral Divisions (EDs) where the Proposed Project site is located. The Proposed Project site lies primarily within the Knocknacarragh ED with a small portion located within the Bearna ED as shown in Figure 5-1 and Figure 5-2 below. The Knocknacarragh ED and Bearna ED and will be referred to hereafter as the Population Study Area for this chapter. The Population Study Area has a population of 18,032 persons and comprises a total land area of 900 hectares or 9 square kilometres (km^2) (Source: CSO Census of the Population 2022).

The population density of the Population Study Area recorded during the 2022 Census was 2,047 persons per square kilometre. This figure is significantly higher than the State and County Galway and higher than Galway City.

The proportion of the Population Study Area population is generally similar to those recorded at State level, County Galway and Galway City for most categories. In general, older age categories are more sensitive to change whereas age categories within the 15 -44 age brackets would be considered to be less sensitive to change. Within the Study Area, the highest population percentage occurs within the 25 - 44 age category at 28.7%. This age category would be considered to be less sensitive to change.

The highest level of employment within the Population Study Area was recorded in the 'Non – Manual' category. Approximately 40% of those employed within the Population Study Area form part of this category, in comparison to 3.9% of Galway County population, 34.9% of Galway City and 43.2% at State level. After 'Non-Manual', the next highest levels of employment within the Population Study Area are 'Employer/Manager' and 'Other'. The categories in which the lowest percentage of the Population Study Area was recorded are 'Agricultural Worker' (0.1% of the Study Area population) and 'Farmer' (0.2% of the Study Area population).

Ireland is divided into seven tourism regions. The Proposed Development is located within the West Region. According to the *'Key Tourism Fact 2024'* published by Fáilte Ireland, the West Region which comprises Counties Galway, Mayo and Roscommon, benefited from approximately 13.4% of the total tourism revenue in 2024.

There are no tourist attractions located in the immediate vicinity of the Proposed Project site. Key tourist attractions within the wider area of Galway City include University of Galway, a number of theatres, Sports facilities (Pearse Stadium, Eamon Deacy Park, The Sportsground, Galway Racecourse etc.).

Effects on human health during the construction and operational phases are described in Chapter 5 in terms of health and safety, air quality, water quality, traffic and transport, noise and vibration and major accidents and natural disasters. Where a negative effect was identified, the appropriate mitigation measures is also described in this chapter of the EIAR and will be put in place to ensure there will be no negative effects on human health within the Population Study Area.

Following consideration of the residual effect (post-mitigation), the Proposed Development will not result in any significant effects on population and human health.

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1.6 Biodiversity

The Biodiversity Chapter assesses the likely significant effects (both alone and cumulatively with other projects) that the Proposed Development may have on Biodiversity and sets out the mitigation measures proposed to avoid, reduce or offset any potential significant effects that are identified.

The habitats within the Proposed Development site, and wider EIAR Study Area, were the subject to a detailed survey and assessment carried out by MKO ecologists between March 2024 and June 2026. A detailed habitat map was produced of the entire Proposed Development site. Multidisciplinary walkover surveys, and dedicated faunal surveys of the wider EIAR Study Area, of which the Proposed Development site is a component, were undertaken on the 20th March, 24th April, and 15th May of 2024, and the 20th March 2025, and 23rd June of 2026. All habitats were classified in accordance with Fossitt (2000). A comprehensive walkover of the entire site was completed. Wintering bird surveys were completed on the 20th March, 29th November, and 11th December of 2024, and the 23rd January, 13th February, and 20th March of 2025. Breeding bird surveys were carried out on the 24th April, 15th May, 12th June 2024, and 30th April 21st May and 23rd June 2026. Finally, bat surveys were carried out on various dates between August 2023 and May 2026. The surveys carried out allowed for a comprehensive assessment of the Proposed Development sites significance for local biodiversity to be ascertained.

The lands contained within the Proposed Development site are largely composed of agricultural grasslands, with smaller areas of disturbed ground, scrub and wet grassland and treelines and hedgerows forming field boundaries. Several agricultural buildings are located in a small farmyard towards the centre of the Proposed Development site.

The construction of the Proposed Development will result in the loss of existing habitats on site, including habitats of 'local importance-higher value', including dry calcareous and neutral grassland, treelines, hedgerows and scrub. Approximately 1.73ha of dry calcareous and neutral grassland, 0.053ha of scrub, 212m of treeline and 363m of hedgerow will be lost as a result of the Proposed Development. The loss of these habitats also represents a loss of potential nesting, commuting and foraging habitat for local wildlife (e.g. bats and birds). The landscape plan prepared for the Proposed Development mitigates for the loss of these habitats through the creation of a wildflower meadow and significant lengths of hedgerow, as well as tree planting throughout. Post-construction, the Proposed Development will result in a residual effect, significant at the local geographic scale, as a result of the loss of existing habitats. However, overtime, as the proposed planting becomes established and matures the effect of the change in habitats on site will be reduced to be insignificant.

With the exception of bats, no protected mammal species were recorded within the Proposed Development site or wider EIAR Study Area. The Knocknacarragh Stream, which lies approximately 85m to the north of the Proposed Development site, at its closest point, does not provide suitable supporting otter habitat due to its culverted nature in proximity to the site. No resting or breeding sites for otter or badger were identified within the Proposed Development Site. No signs of any additional protected fauna were recorded within the study area during the field surveys.

During 2024 dusk emergence surveys small numbers of Soprano pipistrelle bats were observed emerging from two of the agricultural buildings located within the Proposed Development site. These buildings were therefore identified as bat roosts. Although no emerging bats were recorded during the 2026 dusk emergence survey these buildings are still considered roosts. These buildings will be demolished to facilitate the construction of the Proposed Development and therefore a Bat Derogation Licence has been obtained from NPWS to allow this demolition to take place, in line with an agreed mitigation strategy. As part of the mitigation strategy proposed, alternative new roosting locations will be provided in the form of one Rocket Bat Box and two pole-mounted woodcrete bat boxes in suitable

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locations around the perimeter of the Proposed Development site. Eleven trees, containing potential roost features which could be used by roosting bats, will be removed to facilitate the Proposed Development. No evidence of roosting bats was recorded in any of these trees but in consideration of the transient nature of bat tree roosts and owing to the fact that bats are a mobile species, mitigation in the form of pre-commencement surveys is proposed, to prevent direct harm to bats which could potentially establish a roost in these trees in the interim.

Based on the results of bird surveys undertaken, the Proposed Development site does not provide significant foraging or resting habitat for wintering bird species and therefore significant effects on wintering birds are not predicted. The habitats within the Proposed Development site do provide suitable nesting and foraging habitat for local populations of breeding birds and the construction of the Proposed Development has the potential to result in disturbance effects, habitat loss and mortality to individual birds, in the absence of mitigation. Seasonal limitations with respect to site clearance works to facilitate the construction of the Proposed Development are proposed as mitigation to ensure compliance with the Wildlife Act.

Two invasive species were recorded within, or in close proximity to the Proposed Development site. In the absence of mitigation, the construction of the Proposed Development could result in the spread of these invasive species to the surrounding environment. An Invasive Species Management Plan (ISMP) has been prepared and is submitted as part of this planning application. Measures outlined in the ISMP will ensure that the invasive species recorded on site are contained, treated and eradicated in line with best practice.

The Proposed Development has the potential to result in a deterioration of surface and ground water quality in the receiving environment, in the absence of mitigation. A project-specific CEMP has been prepared by MKO for the construction of the Proposed Development. Measures relating to the protection of surface waters, pollution prevention, avoidance of cement leachate and hydrocarbons are proposed to prevent significant effects on receiving surface and ground waters.

In terms of operational effects, the Proposed Development has the potential to result in habitat fragmentation and disturbance to local bat populations through the introduction of artificial lighting. The operational lighting design has been designed to reduce any potential disturbance impacts to bat and therefore no significant residual effect on bats is predicted.

In addition, the operation of the Proposed Development has the potential to result in a deterioration in water quality in receiving waters via run-off of pollutants and the generation of foul waters, if not adequately treated. The surface water drainage design has incorporated a range of SuDS measures to reduce the rate of runoff, improve the quality and reduce the quantity of surface water runoff. Foul water generated will be transferred to Mutton Island WWTP for treatment prior to ultimate discharge to the coastal waters of Galway Bay. Therefore, the Proposed Development will not result in any significant effect on receiving surface waters during its operation.

Provided that the Proposed Development is constructed and operated in accordance with the design, and best practice and mitigation measures described within this application, significant impacts on biodiversity are not anticipated.

1.7 Land, Soils and Geology

This chapter assesses the likely significant effect of the Proposed Development on land, soils and geology and identifies the mitigation measures required to avoid, reduce or offset any potential significant adverse effects.

The existing land, soils and geological environment was characterised using a combination of desk studies, site walkover surveys and site-specific ground investigations undertaken in 2019 and 2025. The

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assessment was informed by boreholes, trial pits, infiltration testing, groundwater monitoring and laboratory analysis of representative soil samples.

The Proposed Development site covers approximately 2.9 ha in the townland of Knocknacarra, Co. Galway, approximately 3 km west of Galway City Centre. The site comprises predominantly brownfield land with some areas of agricultural grassland, together with an existing dwelling, agricultural buildings, stone walls and treelines. Ground levels range from approximately 19 m to 30 m OD, with the site generally sloping from northeast to south.

The site is underlain by shallow, reasonably drained mineral soils with a small area of poorly drained soils along the western boundary. Subsoils comprise predominantly granite till, together with localised areas of peat, made ground and shallow bedrock. The underlying bedrock consists of granite, generally encountered between approximately 0.7 m and 3.3 m below ground level.

Ground investigations included laboratory testing of representative soil samples for contaminants, including heavy metals, hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), asbestos and other inorganic parameters. The investigations identified no asbestos or significant contamination. Minor hydrocarbon concentrations were recorded in isolated locations but were below the relevant assessment criteria. Overall, the site is considered suitable for the proposed residential development, subject to the implementation of the recommended mitigation measures.

Construction of the Proposed Development will require excavation of topsoil, subsoil and limited bedrock for foundations, roads, drainage infrastructure and underground services. Excavated material suitable for reuse will be retained on site where practicable, with surplus material removed to appropriately authorised facilities. Standard construction environmental management measures will be implemented to minimise the risk of soil erosion, sediment generation and accidental spillages.

The site does not contain any designated geological heritage features or protected soil resources, and no significant economic geological resources will be affected by the Proposed Development.

With the implementation of the mitigation measures outlined in the EIAR, no significant adverse effects on land, soils or geology are predicted during either the construction or operational phases of the Proposed Development. The assessment also concludes that no significant cumulative effects on land, soils or geology are expected.

1.8 Hydrology and Hydrogeology

This chapter assesses the likely significant effects of the Proposed Development on the water environment, including surface water, groundwater and flood risk, and identifies the mitigation measures required to avoid, reduce or offset any significant adverse effects.

The hydrology and hydrogeology of the site were characterised using a combination of desk studies, site walkover surveys, surface water and groundwater monitoring, hydrochemical sampling, and site-specific ground investigations undertaken in 2019 and 2025.

The Proposed Development site is generally undulating, with ground levels ranging from approximately 19 m to 30 m OD, and slopes generally from northeast to south.

The site lies within the Galway Bay North Catchment and the Knocknacarragh_010 Sub-basin. There are no permanent open watercourses within the site boundary. The nearest surface water feature is the Knocknacarragh Stream, located immediately west of the site, which flows southwards before discharging to Rusheen Bay. Surface water sampling confirmed good baseline water quality, with no evidence that the site is adversely affecting the receiving water environment.

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The underlying bedrock is classified as a Poor Aquifer, where groundwater movement is limited and largely controlled by fractures in the granite bedrock. Groundwater monitoring and infiltration testing confirmed that groundwater flow is shallow and localised, with generally low permeability across much of the site.

Given the low permeability of the overlying subsoils and the low transmissivity of the underlying fractured bedrock aquifer, the potential for groundwater recharge, dispersion, and movement within the aquifer is relatively limited. The shallowest water levels occur in permeable sediments and made ground, suggesting these zones respond quickly to precipitation and surface infiltration.

The site is not located within an area of significant flood risk. A Flood Risk Assessment has confirmed that the Proposed Development is appropriate for the site and will not increase flood risk elsewhere.

Surface water generated by the Proposed Development will be managed using a Sustainable Drainage System (SuDS), including rain gardens, swales, permeable paving, tree pits, attenuation storage and flow control measures. Where ground conditions are suitable, runoff will infiltrate to the ground through soakaways. Where infiltration is not feasible, runoff will discharge at controlled greenfield rates to the existing storm sewer network. Oil interceptors and other treatment measures will ensure that runoff quality is maintained before discharge.

Foul wastewater from the Proposed Development will discharge via the existing Uisce Éireann sewer network to the Mutton Island Wastewater Treatment Plant. Potable water will be supplied from the existing public water supply network.

During construction, there is potential for temporary impacts on surface water and groundwater from earthworks, sediment runoff and accidental spillages of fuels, oils or construction materials. These risks will be controlled through the implementation of best practice construction methods, including appropriate drainage, erosion and sediment controls, pollution prevention measures, careful storage and handling of fuels and chemicals, and the preparation and implementation of a Construction Environmental Management Plan.

During operation, the proposed drainage infrastructure has been designed to replicate the existing hydrological regime as closely as practicable while improving the quality of runoff leaving the site. The combination of SuDS features, attenuation storage and controlled discharge will ensure that the Proposed Development will not increase downstream flood risk or adversely affect surface water or groundwater quality.

A Water Framework Directive (WFD) Compliance Assessment was undertaken for the relevant surface water and groundwater bodies. The assessment concluded that, with the implementation of the proposed mitigation measures, the Proposed Development will not cause deterioration in the status of any water body, prevent the achievement of Water Framework Directive environmental objectives, or adversely affect hydrologically connected designated sites.

The assessment also considered the cumulative effects of the Proposed Development together with other existing, permitted and proposed developments in the area. With the implementation of the proposed mitigation measures, no significant cumulative effects on the water environment are predicted.

Overall, no significant adverse effects on hydrology, hydrogeology, flood risk, surface water quality or groundwater quality are predicted during either the construction or operational phases of the Proposed Development.

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1.9 Air Quality

Chapter 9 of the EIAR identifies, describes and assesses the potential significant direct and indirect effects on air quality arising from the construction and operational phases of the Proposed Development.

Air Quality Zones

The EPA has designated four Air Quality Zones for Ireland:

- Zone A: Dublin City and environs
- Zone B: Cork City and environs
- Zone C: 16 urban areas with population greater than 15,000
- Zone D: Remainder of the country.

These zones were defined to meet the criteria for air quality monitoring, assessment and management described in the CAFE Directive. The site of the Proposed Development lies within Zone C, which represents other cities and large towns.

The EPA publishes Air Monitoring Station Reports for monitoring locations in all four Air Quality Zones. The most recent report on air quality in Ireland, '*Air Quality in Ireland 2024*' was published by the EPA in September 2025. The figures from the summary tables appendix of this report relate to air quality data from Ennis (46km to the south of the site), Portlaoise (123km to the south-east), Dundalk (195km to the north-east) and Letterkenny (260km northeast). Monitoring Stations have been used to inform the tables below. These monitoring locations lie within Zone C respectively. Similar measurement values for all air quality parameters at the Zone C sites would be expected for the Proposed Development site.

Impacts of the Proposed Development

The Proposed Development will result in various air quality impacts during the construction phase, including short-term, moderate to slight, negative impacts from exhaust emissions generated by construction vehicles, machinery, construction works, and transport to and from the site. The overall residual effects on air quality due to the construction of the Proposed Development will be a short-term, imperceptible, neutral/negative effect on Air Quality.

Dust emissions are assessed as low to medium risk during the construction phase, resulting in short-term, moderate, negative impacts. However, mitigation and monitoring measures such as use of wheel wash facilities, water misting and dust suppression practices are proposed to reduce these impacts. With these in place, residual effects on air quality are considered to be short-term, imperceptible, and negative.

The construction phase will give rise to minor increases in vehicle emissions, however, with the implementation of the appropriate mitigation measures described in Chapter 9 of the EIAR the potential for exhaust emissions will be limited and controlled through site layout design and mitigation measures. No dust emissions are anticipated during the operational phase. Cumulatively, during the construction phase, overlap with nearby developments may cause long-term, imperceptible and negative impacts. However, during the operational phase, cumulative effects are long-term, imperceptible as the operational phase will be minimal, primarily relating to residential vehicle movements.

Chapter 9 of the EIAR followed relevant guidance and best practice to provide an assessment of potential effects from the Proposed Development on air quality, either alone or cumulatively considered with other relevant activities in the vicinity of the site. It is concluded that there will be no significant

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effects on Air Quality and human health from the Proposed Development, either alone or cumulatively with other relevant developments in the vicinity.

1.10 Climate

This chapter identifies, describes, and assesses the potential significant direct and indirect effects on climate arising from the construction and operation of the Proposed Development.

Although variation in climate is thought to be a natural process, the rate at which the climate is changing has been accelerated rapidly by human activities. Climate change is one of the most challenging global issues facing the world today and is primarily the result of increased levels of greenhouse gases in the atmosphere. Increasing human emissions of carbon dioxide and other greenhouse gases cause a positive radiative imbalance at the top of the atmosphere, meaning energy is being trapped within the climate system. The imbalance leads to an accumulation of energy in the Earth system in the form of heat that is driving global warming.[1,2] Greenhouse gases come primarily from the combustion of fossil fuels in energy use.

The EPA publish Ireland's greenhouse gas emission projections and at the time of writing, the most recent report, *'Ireland's Greenhouse Gas Emissions Projections 2024-2055'*[3] was published in May 2025. The report includes an assessment of Ireland's progress towards achieving its emission reduction targets out to 2030 set under the ESR.

The EPA Emission Projections Update notes that Ireland is not on track to meet the 51% emission reduction target by 2030 (as compared to 2018 levels) with the first two carbon budgets (2021-2030), which aim to support the achievement of a 51% emissions reduction goal, projected to be a significant margin.

- Carbon Budget 1 is projected to be largely met, with WEM exceeding by 0.4 MtCO2eq and WAM being 1.8 MtCO2eq under budget.
- Carbon Budget 2 is projected to be exceeded by a margin of 53 to 81 MtCO2eq.

It has become imperative to prioritise sustainability in the design of mechanical and electrical systems within residential buildings. The efficient operation of these systems is vital not only for the comfort and well-being of residents but also for minimising environmental impact. The mechanical and electrical systems within residential buildings play a crucial role in ensuring a comfortable and efficient living environment. Sustainable design principles focus on optimizing these systems to reduce energy consumption, minimise carbon emissions, and enhance the overall environmental performance of buildings. A Climate Scheme Sustainability Statement has been included in Appendix 4-2 to the EIAR and is further detailed in Section 10.4 in Chapter 10.

In relation to greenhouse gas emissions associated with embodied carbon and associated construction phase transport movements of the Proposed Development, the TII Carbon Tool has been utilised to assess the impacts of the Proposed Development in terms of potential carbon losses. The total amount of CO2eq arising from the construction phase of the Proposed Development, in tonnes, is 5,379. When considering these greenhouse gas emissions within the context of the national Built Environment – Residential Sector Emissions Ceilings detailed in Section 10.2.2, the Built Environment – Residential Sector has an emissions ceiling of 23 MtCO2eq for the second carbon budget period (2026-2030). The total emissions arising from the construction phase of the Proposed Development account for 0.03% of the available budget in this carbon budgeting period. Therefore, any cumulative construction phase

[1] *Hansen, J.; Sato, M.; Kharecha, P. et al. Earth's Energy Imbalance and Implications. Atmospheric Chemistry and Physics 2011, 11 (24), 13421–13449.* https://doi.org/10.5194/acp-11-13421-2011
[2] *von Schuckmann, K.; Palmer, M. D.; Trenberth, K. E. et al. An Imperative to Monitor Earth's Energy Imbalance. Nature Clim Change 2016, 6 (2), 138–144.* https://doi.org/10.1038/nclimate2876.
[3] *EPA (2025) Ireland's Greenhouse Gas Emissions Projections 2024-2055*

emissions would represent a very small portion of the Built Environment – Residential sector emissions ceiling and would have a permanent, imperceptible negative effect on climate.

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Similarly, the operational phase of the Proposed Development has the potential to release greenhouse gas emissions associated with energy consumption within the residential units. Operational emissions will arise primarily from the use of electricity for space heating, hot water, lighting and appliances. The Proposed Development has been designed to achieve Net Zero Energy Building (NZEB) standards and incorporate energy efficiency measures and renewable energy technologies to minimise operational energy demand and associated greenhouse gas emissions. Operation of the Proposed Development will generate greenhouse gas emissions associated with energy use; however, these will be minimised through energy-efficient design measures and compliance with NZEB standards.

1.11 Noise and Vibration

A noise and vibration impact assessment has been undertaken in relation to potential impacts at surrounding receptors during construction and operation of the Proposed Development. In addition, an inward noise assessment has been undertaken to assess potential noise impacts on residents of the Proposed Development resulting from noise emissions arising in the surrounding environment, chiefly from road traffic.

There are no dwellings on the Proposed Development site. A historic onsite dwelling currently used for agricultural purposes will be retained. Several other agricultural buildings will be demolished. A large number of residential buildings are located across the surrounding area. The nearest of these is a dwelling within the Knocknacarra Masterplan area. Other receptors include dwellings at Kingston Gardens to the southwest, dwellings along the R337 to the south, and apartments at Altán to the north. A baseline noise survey indicates that the local soundscape is dominated by local and distant road traffic noise.

Ambient noise levels across the local area were used to identify appropriate construction phase noise criteria. Likely construction plant were identified, and their noise emissions data used to predict noise levels at surrounding receptors. Predicted levels were assessed in the context of identified criteria, and mitigation measures identified where required. Potential sources of vibration during the construction phase were identified, and impacts assessed by reference to commonly applied criteria.

In most cases, construction phase noise impacts will be imperceptible to slight negative, and temporary. During certain activities, impacts will increase to temporary moderate negative at a small number of receptors. It is proposed to provide advance notification to all residents where construction works are proposed within 50 m of existing dwellings.

Impacts will be temporary significant negative at two receptors at Kingston Gardens during rock breaking works. This impact may also be mitigated through prior notification to residents at these receptors in advance of rock breaking. It is also proposed to erect a temporary acoustic screen on the western side of the rock breaking zone and in proximity to the dwelling in the Masterplan area for the duration of rock breaking. The screen will be designed and installed in accordance with BS 5228-1:2009 recommendations. With an expected reduction of 3-5 dB resulting from screen installation, the residual noise impact is expected to reduce to temporary moderate negative.

Operational noise emissions arising within the completed site will be urban-residential in character, and will be identical in character to emissions arising within surrounding residential zones. It is concluded that the Proposed Development, once completed, will give rise to neutral and imperceptible noise impacts at surrounding receptors.

Cumulatively, the soundscape at the existing dwelling house in the Masterplan area and Altán apartments will change due to the introduction of traffic on Proposed Project (i.e. the Proposed Development and LRD East, should it receive a grant of permission) roadways in proximity to these

receptors. This impact will be initially moderate negative, reducing to slight negative in the long term due to the introduction of more EV vehicle usage. Night-time impacts will be not significant negative.

External and internal noise levels at the Proposed Development will be satisfactory in the context of ProPG guidance and noise action plan recommendations. When assessed in isolation, no enhanced acoustic elements are required in relation to inward noise, and standard thermal glazing will provide sufficient protection for residents. However, a cumulative inward assessment indicates that marginally enhanced glazing (RW 35 dB, optimised for road traffic noise) is required for north-facing living rooms and bedrooms in blocks 01, 02 and 03. This glazing is required to provide for potential vehicle movements on the Proposed Project main access roadway, resulting chiefly from a potential future retail centre in the Knocknacarra Masterplan area.

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1.12 Cultural Heritage

The Proposed Development site is located within an area of greenfield agricultural pastureland with a localised area of brownfield in the northern half. Chapter 12 of the EIAR presents a baseline study of and impact assessment on, the cultural heritage of the Proposed Development and an associated 500m Study Area. The assessment was based on a field inspection and a programme of desktop research which were carried out to identify and record any archaeological, architectural and cultural heritage receptors that may be affected by the Proposed Development.

There are no recorded archaeological sites located within the Proposed Development boundary. There is one recorded site located 250m southwest of the Proposed Development classified as a Ringfort-unclassified (Record of Monuments and Places (RMP) No. GA094-19). There are no Protected Structures or National Inventory of Architectural Heritage (NIAH) listed structures within the Proposed Development boundary. In addition, there are no Architectural Conservation Areas located within the study area. The Proposed Development will not result in any predicted direct negative impacts on any known archaeological monuments or designated architectural heritage structures.

While no evidence, for any unrecorded archaeological sites within the Proposed Development site was identified during the desktop study and field inspections carried out as part of this assessment, the potential for survival of unrecorded, sub-surface archaeological remains within its boundary cannot be discounted.

In order to identify any potential unrecorded archaeological remains within the Proposed Development, a programme of archaeological test trenching, under licence by the National Monuments Service (NMS), will be carried out within the site in advance of the construction phase. The lands within the boundary of the Proposed Development were appraised by a geophysical specialist (Dr. Ger Dowling) and were considered unsuitable for non-invasive archaeological geophysical surveys. In the event that any archaeological remains are discovered during the testing programme the NMS will be notified and consulted in relation to appropriate future mitigation strategies, which may entail preservation in situ, by avoidance, or preservation by record by archaeological excavations. After mitigation, no residual effects on archaeological heritage are expected.

1.13 Landscape and Visual

Chapter 13 of the EIAR includes a Landscape and Visual Impact Assessment (LVIA) of the Proposed Development. The LVIA assesses the likely significant effects of the Proposed Development on the landscape and visual amenity. The LVIA in Chapter 13 was informed by desktop studies and receptor mapping, site visits, verified photomontages, and an impact assessment methodology which follows best practice guidance for LVIA. Chapter 13 establishes a study area for the assessment of landscape and visual effects comprising all lands within 1km of the Proposed Development, termed the 'LVIA Study Area'. The assessments determined that there would be very limited visibility of the Proposed Development beyond the immediate vicinity of the Proposed Development site (Within 250 metres).

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No effects will occur on any landscape and visual receptors or designations of Very High sensitivity in the LVIA Study Area.

Most proposed buildings sit within the centre of the private lands of the Proposed Project. However, some buildings along the northern and western periphery of the Altan Quarter directly adjoin the Altan Apartments and the L10111, and buildings along the western and southern periphery of the Kingston Quarter directly adjoin residences on Kingston Gardens and 3 no. residences to the south. The Proposed Development is otherwise well set-back from receptors by the intervening greenfield lands of the proposed Kingston Park, the built environment and the lands of the proposed LRD East, leaving most buildings well concealed and with limited visual exposure in the surrounding landscape. Therefore, the focus of the LVIA and photomontages were on the proposed buildings located near the outer periphery of the Proposed Development site.

Perceptual and aesthetic changes on the wider landscape character surrounding the Proposed Development site will not be significant due to the very limited and localised visibility of the Proposed Development. The greatest landscape effects will occur on the footprint of the Proposed Development site itself where the landscape will be materially altered from an undeveloped greenfield site to a suburban landscape comprising residential development. Due to local landform characteristics and the nature of visual screening from mature vegetation and the built environment, there will be no significant visual changes to the character of the landscape of the wider landscape setting within the LVIA Study Area. Visibility is only likely to occur from local residential receptors and the local road network immediately surrounding the Proposed Development site.

Overall, the landscape effects associated with the Proposed Development are highly localised and limited to the Proposed Development site itself where residual 'Moderate' landscape effects occur. Changes to the landscape and views are appropriately in keeping with the nature and character of the surrounding suburban landscape elsewhere in Knocknacarra. The Proposed Development is seen as residential development located in lands zoned as R (Residential) in the GCDP and is therefore aligned with the spatial planning of this suburban landscape of Galway City in local planning policy.

1.14 Major Accidents and Natural Disasters

This chapter of the Environmental Impact Assessment Report (EIAR) describes the likely significant effects on the environment arising from the vulnerability of the Proposed Development as detailed in Chapter 4 to risks of major accidents and/or natural disasters, as well as the potential of the Proposed Development itself to cause potential major accidents and/or natural disasters.

Major accidents or natural disasters are hazards which have the potential to affect the Proposed Development and consequently have potential effects on the environment. These include accidents during construction and operation caused by operational failure and/or natural hazards. The assessment of the risk of major accidents and/or disaster considers all factors defined in the EIA Directive that have been considered in this EIAR, i.e., population and human health, biodiversity, land, soil, water, air, climate, material assets, cultural heritage and the landscape.

A desk-study has been completed to establish the baseline environment for which the proposed risk assessment is being carried out. This will influence both the likelihood and the impact of a major accident or natural disaster. Local and regional context has been established prior to undertaking the risk assessment to develop an understanding of the vulnerability and resilience of the area to emergency situations.

Further detail on the baseline environment, i.e., pre-identified risks identified in County Galway is provided in Chapter 14 of this EIAR in Section 14.3. The scenario with the highest risk score in terms of occurrence of major accidents and/or natural disaster during construction was identified as 'Contamination' of the Proposed Development site and risk of 'Fire/Explosion' during construction and operation.

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The Proposed Development will be designed and built in line with the best practice measures set out in this EIAR and, as such, mitigation against the risk of major accidents and/or disasters is embedded through the design.

The risk of a major accident and/or disaster during the construction of the Proposed Development is considered 'low' in accordance with the '*Guide to Risk Assessment in Major Emergency Management*' (DoEHLG, 2010).

1.15 Material Assets

This chapter of the EIAR addresses the likely significant effects of the Proposed Development on transportation infrastructure, and other material assets including utilities waste management, telecommunications and aviation which are economic material assets of human origin.

1.15.1 Traffic and Transport

The purpose of this chapter is to assess the potential impact of the Proposed Development on the existing local transport network and to review whether the proposed site access (and the existing junctions which fall within the scope of the study) will have adequate capacity to carry the development traffic and the future growth in existing road traffic to the design year and beyond and to also identify possible mitigation measures to reduce traffic impacts. An assessment of the accessibility of the site for cyclists, pedestrians and public transport users has also been made.

The Proposed Development is located approximately 3km west of Galway City Centre and is an existing 2.9ha greenfield/brownfield site at Kingston, Knocknacarra, Galway. Vehicular access is proposed via a priority T-junction off the Altan arm of the WDR / Bothar Stiofáin / Altan roundabout.

The increase in traffic volumes, as a result of construction vehicles visiting the site, is not considered to be excessive and will be spread out over a three year period.

It is recommended that all delivery drivers and haulage companies serving the Proposed Development are provided with instructions / directions on accessing the site from the WDR and the surrounding local road network. Overall, there will be a short-term slight negative impact to local traffic during the construction phase.

The Operational Phase of the Proposed Development has the potential to have the largest impact. However, based on the assessment carried out in the Traffic and Transport Assessment (Appendix 15-1), it is considered that in general, the traffic generated by the Proposed Development in Knocknacarra, Co. Galway will be adequately accommodated on the local road network in the vicinity. The junctions are predicted to operate below capacity without the development traffic in the future design years. The analysis predicts that the inclusion of the Proposed Development traffic will result in a slight increase in the degree of saturation for the junctions, however all junctions are forecast to continue to operate below capacity. As such, no Significant Negative effects are anticipated.

1.15.2 Other Material Assets

This section of the Material Assets chapter assesses the likely significant effects of the Proposed Development on water, electricity, telecommunications, and other material assets.

The Proposed Development site currently comprises primarily of low input agricultural grassland in the southern section and areas of hardstanding, greenfield and agricultural sheds in the northern section. There are also a number of hedgerows and stonewalls present within the Proposed Development site. Due to the existing land uses at the site, the possible presence of underground infrastructure is limited in extent.

A development of this nature has the potential to impact the following types of utilities and services:

- Electricity and Gas: There are overhead electricity cables crossing parts of the site, but there are no gas pipelines within the site. Measures will be implemented during construction to protect existing electricity infrastructure and any unidentified services.
- Telecommunications: No significant impacts on telecommunications infrastructure are anticipated. Existing services will be identified before construction and protected or relocated if necessary in consultation with the relevant providers.
- Water Supply: There are no known wells on the site. Water for the Proposed Development will be provided via new connections to adjacent existing infrastructure. Water will be supplied through connections to existing and permitted Uisce Éireann infrastructure. A Confirmation of Feasibility Letter has been issued by Uisce Éireann.
- Sewerage and Wastewater: Wastewater will be disposed of via new connections to existing adjacent infrastructure.
- Land Use: The site currently comprises low-input agricultural grassland together with areas of hardstanding, greenfield land and agricultural sheds.
- Waste Facilities: There are no waste treatment or disposal sites on or near the project area. Waste management during the construction phase is outlined in the CEMP.

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On the basis of the assessment carried out in Chapter 15, the Proposed Development is not expected to result in any significant effects on built services, utilities or waste management infrastructure.

1.16 Interactions

Chapters 5 to 15 of this EIAR identify the potential significant environmental effects that may occur in terms of Population and Human Health, Biodiversity, Land, Soils and Geology, Hydrology and Hydrogeology, Air Quality, Climate, Noise and Vibration, Landscape and Visual, Cultural Heritage, Material Assets (Roads and Traffic, and Built Services), and Major Accidents and Natural Disasters, as a result of the Proposed Development. All of the potential significant effects of the Proposed Development and the measures proposed to mitigate these have been outlined in the preceding chapters of this EIAR. For any development with the potential for significant environmental effects there is also the potential for interaction between these potential significant effects. The result for interactive effects may exacerbate the magnitude of the effects or improve them or have a neutral effect. A matrix is presented in Chapter 16 of the EIAR to identify the potential interactions between the various aspects of the environment already discussed in the EIAR. The matrix highlights the potential for the occurrence of positive, neutral or negative effects during both the construction and operational phases. Where any potential interactive negative impacts have been identified, a full suite of appropriate mitigation measures have been included in the relevant sections (Chapters 5-15) of the EIAR.

A matrix is presented in Table 16-1 of Chapter 16 to identify potential interactions of impacts between the various aspects of the environment already assessed throughout this EIAR. The matrix highlights the potential occurrence of positive, neutral or negative effects of the Proposed Development. The matrix is symmetric, with each environmental component addressed in the chapters of this EIAR being placed on both axes of a matrix, and therefore each potential interaction is identified twice.