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)., who intend 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 (Proposed Development).

The Proposed Development site which covers an area of 5.37 hectares (ha) will consist of a mix of residential units, open spaces, creche and all other site related infrastructure. The Proposed Development site 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 (Proposed Project). The Proposed Project involves the construction of more than 500 residential units, and the development will require separate, individual planning applications for each part of the project. The Proposed Project forms part of an overarching masterplan for the wider landholding that was extensively discussed and refined in collaboration with the planning authority. 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.

The Applicant

The Applicant for the Proposed Development is Kingston Stables Ltd. The client 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 clients 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 362 no. residential units in 4 no. development areas with a mix of apartment and house types on a site area of 5.37 ha. The buildings range between 2 no. and 6 no. storeys in height. The development will comprise the following:
  - 4 no. 2-bed townhouses;
  - 40 no. 3-bed townhouses;
  - 21 no. 4-bed townhouses;
  - 15 no. 1-bedroom duplex apartments;
  - 46 no. 2-bedroon duplex apartments;
  - 15 no. 2-bedroom duplex houses;
  - 46 no. 3-bedroom duplex houses;
  - 114 no. 1-bedroom apartments;
  - 56 no. 2-bedroon apartments;
  - 5 no. 3-bedroom apartments.
- Demolition of existing structures (333.8 m^2);
- Vehicular access to the proposed development from a permitted road (Planning Reference 24/60370 refers);
- The provision of new active travel cycle and pedestrian access from Millers Lane;

- Upgrades to the existing access at Kingston Road
- The provision of a childcare facility (440 m^2);
- The provision of public open space;
- The provision of 665 no. bicycle parking spaces;
- The provision of 313 no. car parking spaces;
- Public lighting, bin stores, signage, services, ESB substation, 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 Environmental Impact Assessment (EIA) to be carried out by the Planning Authority, 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.

The Proposed Development is located in an area zoned '*R – Residential'* as well as '*Enterprise, Light Industry and Commercial'* within the Galway City Development Plan 2017-2023 (GCDP). The GCDP lists uses which may contribute to the zoning objectives, both of which permit residential and commercial development dependant on the location and scale of development. The land uses outlined in Table 2.2 of Chapter 2 Background to the Proposed Development are deemed appropriate for 'R' zoned land.

The Proposed Development site is part of a parcel of lands identified as being the '*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 scoping document providing details of the application site and the Proposed Development, was prepared by MKO and circulated on 30th April 2024 in relation to this EIAR. These letters were sent to the agencies, Non- Governmental Organizations (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.

1.3 Assessment of the 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 for the Proposed Development is not considered necessary or appropriate. During the design process for the Proposed Development, 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. Further to this, the environmental assessments undertaken as part of this EIAR have proved that there will be no demonstratable harm to the environment, built or archaeological heritage or human health that cannot be prevented or controlled by mitigation measures. In conclusion, the Proposed Development location is the preferred/optimum site.

Alternative Design and Layouts

The following options were considered for the assessment:

- Stage 2 Proposed Layout – Proposed to construct 518 no. residential units at the site along with all associated works. This layout was to comprise 5 no. development areas with a mix of apartment and house types.
- Stage 3 Proposed Development site layout- Proposed to construct 503 residential units and all associated works.
- Stage 4 Finalised Layout – The final design comprises the development of 362 no. residential homes, creche and all associated works. The Proposed Development is part of the overall Proposed Project which has been defined in Chapter 1 of this EIAR.

The assessment considered site constraints as well as feedback from the various stage meetings with GCC as part of the LRD process and also opinions from various consultees.

Alternative Mitigation Measures

The best practice design and mitigation measures set out in this EIAR will contribute to reducing any risks and have been designed to break the pathway between the site and any identified environmental receptors. The mitigation methods proposed follow the principle of avoidance of impact where possible in the first instance, followed by minimisation of impacts where full avoidance is not possible. The mitigation methods proposed represent best practice in the industry. The alternative is to either not propose these measures or propose measures which are not best practice and effective, neither of which is a sustainable option.

1.4 Description of the Proposed Development

The site is located within the townland of Knocknacarra and is approximately 3 km to the west of Galway City Centre. Irish Transverse Mercator (ITM) coordinates for the centre of the site are X 526636, Y 724682.

The planning application (red line) boundary area measures 5.37 ha. The site itself is comprised of a mixture of agricultural grassland and brownfield. Stone walls and treelines are also present within the boundary of the site. There is an existing dwelling in the centre of the site along with some agricultural buildings. The surrounding area is urban in character and the site is surrounded by a number of residential estates and commercial and industrial buildings.

The Proposed Development site can be accessed via both the Western Distributor Road which is located to the north of the site and the Kingston Road (R337) which runs in an east west direction to the south of the site. Both of these roads provide connectivity to Galway City and beyond.

Construction Management

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

Normal Construction working hours for the Proposed Development and the concurrent works will be

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

A CEMP (Appendix 4-1) 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 and Creche 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 362 modern and energy efficient residential units.

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 or indirect effects arising from the construction and operation 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 Proposed Development to natural disasters and major accidents.

Information regarding population and general socio-economic data were sourced from the Central Statistics Office (CSO) (2022), the Galway City Development Plan 2023-2029, the Galway County Development Plan 2022-2028, and Fáilte Ireland. Information was also sourced from the Census of Ireland 2022, which is the most recent census for which a complete dataset is available, also the Census of Ireland 2016, the Census of Agriculture 2020 from the CSO website (ww.cso.ie). Census information is divided into State, County, City and Electoral Division (ED) level but may not be available for all levels. For the purposes of this section of the EIAR, ED level data was used wherever possible.

In order to assess the population in the vicinity of the Proposed Project site, the Population Study Area for the Population Section of this EIAR was defined in terms of the 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. The Knocknacarragh ED and Bearna ED and will be referred to hereafter as the Population Study Area for this chapter.

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 Population 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 Population Study Area) and 'Farmer' (0.2% of the Population Study Area).

Ireland is divided into seven tourism regions. The Proposed Development is located within the West Region. According to the *'Key Tourism Facts 2023'* (Fáilte Ireland, 2025), the West Region which comprised Counties Galway, Mayo and Roscommon, benefited from approximately 12.9% of the total tourism revenue in 2023.

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, employment and investment, population, tourism, noise and vibration, dust and air quality, traffic, amenity and land-use. 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 that there will be no adverse 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.

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 of a detailed survey and assessment carried out by MKO ecologists between March 2024 and March 2025. 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 2024 and the 20th March 2025. 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 2024 and 23rd January, 13th February and 20th March 2025. Breeding bird surveys were carried out on the 24th April, 15th May and 12th June 2024. Finally, bat surveys were carried out on various dates between August 2023 and September 2024. 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, disturbed ground and scrub, with treelines and hedgerows forming field boundaries. Three buildings located in a small farmyard are also present within the boundary 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 1.31 ha of dry calcareous and neutral grassland, 0.201 ha of scrub, 217m of treeline and 180m of hawthorn dominated 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 planting of native woodland understorey, comprised of native species, hedgerows and both native and non-native trees. 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 runs to the north of the Proposed Development site boundary 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.

No roosting bats were recorded within the boundary of the Proposed Development site. Three 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 are proposed, to prevent direct harm to bats which could potential 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 Construction Environmental Management Plan (CEMP) (Appendix 4-1) 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 Wastewater Treatment Plant 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 effects that the Proposed Development may have on land, soils and geology and sets out the mitigation measures prescribed to avoid, reduce or offset any potential significant effects that are identified.

The land, soils and geology of the site has been characterised using a combination of desk studies and site investigation data. Site walkover surveys have been completed including visual assessments of exposed soils, subsoil and topographic changes at the Site. Site-specific intrusive site investigation data, comprising of boreholes and trial pits, was reviewed.

The Proposed Development site covers approximately 5.37 ha of land, located in the townland of Knocknacarra, Co. Galway, approximately 3 km to the west of Galway City. The site comprises a mix of agricultural grassland in the south and brownfield land to the north of the EIAR Study Area.

The overall local topography is undulating and generally slopes from northeast to south. The site's elevation ranges from approximately 22 m to 34 m OD (metres above Ordnance datum).

The subsoils across the site are generally comprised of topsoil encountered in 300mm to 500mm thickness, made ground (fill) comprising sandy gravelly clay fill extending to a depth of 3m, peat, and fluvioglacial deposit (firm to stiff sandy gravelly clay with frequent low cobble content. The underlying Bedrock (granite) ranges from 0.7m to 3.3m below ground level (mbgl) in general. Based on the GSI 1:100,000 scale bedrock map of the region, the EIAR Study Area site is predominantly underlain by a fine-grained, weathered pink, equigranular monzogranite with occasional megacrysts (Murvey Granite) in the south and megacrystic pink to grey monzogranite (Errisbeg Townland Granite) in the northeastern portion of the site.

Soil conditions across the EIAR Study Area were assessed through detailed ground investigations in 2019 and 2025. Trial pits and boreholes were advanced, and representative soil samples were analysed for potential contaminants, including heavy metals, hydrocarbons (total petroleum hydrocarbons (TPH) and polycyclic aromatic hydrocarbons (PAHs)), volatile organic compounds (VOCs), asbestos, and key inorganic parameters. During the 2019 Site Investigation, no asbestos was detected, and minor hydrocarbon impacts were recorded in isolated locations but remained below relevant residential assessment criteria. Heavy metal concentrations were within acceptable limits and did not pose a risk to human health or controlled waters.

During the 2025 Site Investigation, laboratory analysis was carried out on soil/waste samples from twenty-seven representative trial pits, boreholes and soil locations targeting a broad coverage and areas where contaminants were indicated by the 2019 Causeway Site Investigation. There were no detections of Asbestos, PAHs total, polychlorinated biphenyls (PCBs) total, benzene, toluene, ethylbenzene, and xylenes (BTEX) or methyl tertiary-butyl ether (MTBE).

The Proposed Development will require excavation of soil and subsoil and temporary stockpiling in preparation for the construction of building foundations and in the preparation of a suitable sub-formation for road construction, trenching for foul and drainage water infrastructure and other services. Significant excavations are not required as there are no subsurface basement-type structures proposed and the existing topography does not require significant alteration.

Rock for construction purposes will be sourced from local licenced quarries. All excavated material will be removed to an authorised waste recovery facility or, if suitable, stockpiled and reused for backfilling and landscaping where appropriate. The handling and storage of spoil will be undertaken in accordance with best practice measures. Storage and handling of hydrocarbons/chemicals will be carried out using best practice methods. Measures to prevent soil and subsoil erosion during excavation and reinstatement will be undertaken to prevent impacts.

The soil/subsoil deposits at the site are not designated (i.e. they do not form part of a designated site). For this reason, and with the implementation of the mitigation measures prescribed in this EIAR and the best practice measures detailed in relation to spoil management, no significant effects on soils or subsoils will occur during the construction or operation phases of the Proposed Development.

Similarly, with the implementation of the mitigation measures outlined in this EIAR, no significant effects on the underlying bedrock geology will occur during the construction or operation phases of the Proposed Development.

An assessment of potential cumulative effects associated with other developments on land, soils and geology has been completed. The land, soils and geology assessment confirms there will be no significant cumulative effects on land, soil and geology as a result of the Proposed Development.

1.8 Hydrology and Hydrogeology

This chapter assesses the likely significant effects that the Proposed Development may have on hydrology and hydrogeology and sets out the mitigation measures proposed to avoid, reduce or offset any potential significant effects that are identified.

The hydrology and hydrogeology of the site has been characterised using a combination of desk studies and site investigation data. Site walkover surveys of the site have been completed which included drainage mapping, field hydrochemistry and water sampling of both surface and groundwater.

The Proposed Development site covers approximately 5.37 ha of land, located in the townlands of Knocknacarra, Co. Galway, approximately 3 km to the west of Galway City. The overall local topography is undulating and generally slopes from northeast to south. The site's elevation ranges from approximately 22 m to 34 m OD.

On a regional scale, the site is located within Hydrometric Area 31 - Galway Bay North. It lies within the Galway Bay North catchment and the Knock [Furbo]_SC_010 sub-catchment. At the local scale, the site is situated within the Knocknacarragh_010 sub-basin. There are currently no open surface watercourses or drains present on the site. The nearest surface water feature is the Knocknacarragh_010 Stream, which originates northwest of the site at Letteragh and flows southward for approximately 3 km before discharging to the sea. A substantial portion of the lower reach of the Knocknacarragh Stream is culverted, extending to its sea outfall at Rusheen Bay, near Blakes Hill in Salthill.

There is no direct connectivity to this surface watercourse on the site, and much of the rainfall that falls on the site likely percolates through the soil. Once within the soil profile the water drains naturally south and westwards towards Galway Bay. There is likely little infiltration to the low permeability granite bedrock except for locally fractured zones. There are no obvious preferential drainage paths at the site and rainfall currently percolates freely to ground.

The bedrock underlying the site is classified as a Poor Aquifer – bedrock, which is generally unproductive except for local zones and lies within the Spiddal (IE_WE_G_0004) Groundwater Body. Based on intrusive site investigations, the soils and subsoils underlying the site comprise of topsoil, made ground (sandy gravelly clay fill), peat, and fluvioglacial deposit (firm to stiff sandy gravelly clay with frequent low cobble content. Transmissivity is low and flow is governed by site topography. Infiltration rates from soakaway infiltration tests in trial pits indicate low infiltration and transmissivity (imperceptible to 9.50E-5 m/s).

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 surface water strategy incorporates attenuation of storm water to limit discharge from the site, although storage facilities and SuDS elements will be designed to allow infiltration or reduction of run-off volumes and rates where possible. The proposed storm water drainage system has been designed to cater for all surface water runoff from all hard surfaces in the Proposed Development including roadways, roofs, parking areas etc. All stormwater generated on site from roadways and roofs will discharge via an Oil/Petrol Interceptor to soakaways/attenuation units to remove possible hydrocarbons.

Comprehensive surface water mitigation and controls are outlined below to ensure protection of all downstream receiving waters during construction and operational phases of the development. Mitigation measures will ensure that surface runoff from the developed areas of the site will be of a high quality and will therefore not have a negative impact on the quality of downstream surface water bodies. Any introduced drainage works at the development site will mimic the existing hydrological

regime, and discharge will be to existing sewers and to ground via soakaways, thereby avoiding changes to surface water flow volumes leaving the site.

During each phase of the Proposed Development a number of activities will take place at the site, some of which will have the potential to effect the hydrological and hydrogeological environment. These significant potential effects generally arise from sediment input from runoff and other pollutants such as hydrocarbons and cement-based compounds. As there is no direct connectivity to any surface watercourses the Proposed Development itself will not pose a significant risk to downstream receptors.

By-pass separators will be installed prior to discharging to the proposed soakaways/attenuation units and existing storm sewer. The separators will be sized to cater for impermeable areas i.e. roads, car parking and footpath areas

All wastewater generated from the Proposed Development will outfall, via gravity, to an existing Uisce Éireann owned 225mm foul sewer line located west of the development along the southern arm junction of the adjacent roundabout and Altan road. The Uisce Éireann foul sewer ultimately discharges to the EPA Licensed Mutton Island Waste Water Treatment Plant, located further west of Galway City.

It is proposed to connect the watermain to supply the Proposed Development at the existing 315mm watermain on the Kingston Road as per Uisce Éireann confirmation of feasibility letter.

Surface water drainage measures, pollution control and other preventative measures have been incorporated into the project design to minimise significant effects on water quality (surface and groundwater) and downstream designated sites.

The key control measure is that all stormwater generated on site from roadways and roofs will discharge via an Oil/Petrol Interceptor to soakaways/attenuation units. Where there is adequate infiltration storm water will discharge to ground via soakaways, otherwise at a controlled Greenfield runoff rate to the existing storm sewer network. Highest standards of site management will be maintained, and utmost care and vigilance followed to prevent accidental contamination or unnecessary disturbance to the site and surrounding environment during construction. Preventative measures also include fuel and concrete management and a waste management plan which will be incorporated into CEMP (Appendix 4-1).

No significant effects to surface water (quality and flows) and groundwater (quality and quantity) will occur as a result of the Proposed Development provided the proposed mitigation measures are implemented. This EIAR presents proven and effective mitigation measures to mitigate the release of sediment. The storage and handling of hydrocarbons/chemicals will be carried out using best practice methods which will ensure the protection of surface and groundwater quality. The Proposed Development will not contribute to downstream flooding.

A Water Framework Directive (WFD) Compliance Assessment has been completed for all waterbodies (surface water and groundwater bodies) with the potential to be impacted by the Proposed Development. With the implementation of the mitigation measures detailed in this EIAR there will be no change in the WFD status of the underlying groundwater body or downstream surface waterbodies as a result of the Proposed Development.

An assessment of potential cumulative effects associated with the Proposed Development and other developments on the hydrological and hydrogeological environment has been completed. During the construction phase the potential for residual impacts on water and ground water receptors is considered to be imperceptible and so the potential for cumulative effects associated with these receptors is limited. During the operational phase, discharges from the Proposed Development will be as per pre-development rates and water quality will be controlled. The water quality controls at the Proposed Development site will ensure no likely significant effects cumulatively will occur during the operational phase.

No significant effects on the water environment will occur during the construction or operation of the Proposed Development.

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 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 Clean Air for Europe (CAFÉ) Directive. The site of the Proposed Development lies within Zone C.

The EPA publishes Air Monitoring Station Reports for monitoring locations in all four Air Quality Zones. The most recent ambient air quality monitoring data for air quality is available in the Air Quality in Ireland 2024 report, published by the EPA in September 2025. The figures from the summary tables appendix of this report relate to air quality data from Ennis (46 km to the south of the site), Portlaoise (123 km to the south-east), Dundalk (195 km to the north-east) and Letterkenny (260 km northeast). 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 imperceptible, negative effects from exhaust emissions generate 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, negative effect on Air Quality.

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

During the operational phase, emissions from vehicle movements from the residents which are expected to have a long-term, slight, negative effect. No dust emissions are anticipated during operation. Whilst the construction phase of the Proposed Development will give rise to minor increases in vehicles emissions, however, with the implementation of the appropriate mitigation measures described in this chapter of the EIAR the potential for exhaust emissions will be limited and controlled through site layout design and mitigation measures. Cumulatively, during the construction phase, overlap with nearby developments may cause short-term, slight negative effects. However, during the operational phase, cumulative effects are long-term and imperceptible as the operational phase will be minimal, primarily relating to vehicle usage from residents.

Conclusion

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 effects on Air Quality from the Proposed Development.

1.10 Climate

This chapter identifies, describes and assesses the potential significant direct and indirect effects on climate arising from the operational and restoration phases 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 anthropogenic 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 global 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 Environmental Protection Agency (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% emissions reduction target by 2030 (as compared to 2018 levels) with the first two carbon budgets (2021-2030), which aim to support achievement of the 51% emissions reduction goal, projected to be exceeded by a significant margin:

- Carbon Budget 1 to be exceeded by a margin of 8 to 12 MtCO2eq
- Carbon Budget 2 to be exceeded by a margin of 77 to 114 MtCO2eq (with carryover from Carbon Budget 1)
- A Climate Scheme Sustainability Statement has been prepared by Moloney Fox Consulting for the Proposed Development and is outlined in Appendix 4-2 of the EIAR.

It has become imperative to prioritize 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 minimizing environmental impact. The mechanical and electrical systems in apartments play a crucial role in ensuring a comfortable and efficient living environment. Sustainable design principles focus on optimizing these systems to reduce energy consumption, minimize carbon emissions, and enhance the overall environmental performance of buildings. A Climate Scheme Sustainability Statement has been included as 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 11,058.5. When

[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*

considering these greenhouse gas emissions within the context of the national Industry Sector Emissions Ceilings detailed in Section 10.2.2, Carbon Budget 1 (2021-2025) has an Built Environment – Residential sector budget of 29 MtCO2eq. and Carbon Budget 2 (2026-2030) has an Built Environment – Residential sector budget of 23 MtCO2eq. With regards to the sectoral emissions ceilings for the Built Environment – Residential sector, these emissions account for 0.04% of the first carbon budgeting period and 0.05% of the second carbon budgeting period. Construction of the Proposed Development will have a long-term permanent imperceptible negative effect on Climate.

Similarly, greenhouse gas emissions will arise from the operation of the Proposed Development, primarily through the burning of fossil fuels, such as natural gas for heating purposes, diesel and petrol for transportation purposes, and methane for waste management purposes. Operation of the Proposed Development will have a long-term slight negative effect on Climate.

1.11 Noise and Vibration

There are no dwellings on the Proposed Development site. The site's position behind other residential areas results in a large number of receptors around the site boundary, consisting of scattered residential estates, apartment complexes, and ribbon development along the R337. No particularly vulnerable receptors such as care centres or nursing homes have been identified within 500m.

The local soundscape is dominated by road traffic across the surrounding area. Road traffic noise is almost continuously present through the night. A noise risk assessment undertaken in accordance with Professional Practice Guidance (ProPG) guidance indicates that the Proposed Development site is low noise risk. In this regard, ProPG states that:

> *'The site is likely to be acceptable from a noise perspective provided that a good acoustic design process is followed and is demonstrated in an acoustic design statement which confirms how the adverse impacts of noise will be mitigated and minimised in the finished development'.*

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 in close proximity to works areas. Construction traffic and vibration impacts will be imperceptible and short term.

During ground clearance works, impacts will increase to moderate at receptors immediately adjacent to the southwest corner, and potentially to significant. These impacts will be temporary, likely to last locally 1-2 days at most. This impact may be mitigated through prior notification to residents at these receptors in advance of these works.

Following completion and occupation of the completed development, daytime and night-time World Health Organisation (WHO) criteria are not expected to be exceeded at any offsite receptor as a result of onsite emissions. Traffic noise arising from public roads in the vicinity will increase slightly as a result of the Proposed Development. However, increases will be imperceptible.

With respect to inward impacts, external noise levels will be generally satisfactory in the context of WHO guidance. Internal levels will also be generally satisfactory, although may require closing of windows in certain rooms at some units to fully achieve compliance during night-time hours.

On this basis, it is considered that there will be no negative noise impact on the local population or on human health.

1.12 Cultural Heritage

The Proposed Development site is located within an area of greenfield agricultural land surrounded by extensive modern suburban developments. 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. The significance of effect on a receptor is considered by establishing its value/sensitivity, and how (and to what extent) it may be impacted based on the design of the Proposed Development.

There are no recorded archaeological sites located within the Proposed Development boundary. Five recorded sites are located within 500m of the development site. 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 the 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 ground conditions within the site have been deemed unsuitable for geophysical testing. 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 impacts 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). **No** effects will occur on will occur on any landscape and visual receptors or designations of Very High sensitivity in the LVIA Study Area.

Most of the proposed residential buildings are located within the centre of the private lands of the Proposed Development site, inset and setback from surrounding receptors in the public realm such as residences and the public road network. The bulk and mass of most proposed buildings are consequently well set back, well-concealed and will have limited visual exposure in the surrounding landscape.

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.

The Proposed Development was assessed from 7 no. viewpoints in the LVIA Study Area. Overall, residual visual effects as a result of the Proposed Development were deemed to be 'Slight' from 4 Viewpoints, and 'Moderate' from 3 Viewpoints. The visual effects occur within a highly localised area representing a small number of residential receptors and the local road network in very close proximity to the Proposed Development.

No significant cumulative landscape and visual effects are likely to arise as a result of the Proposed Development. Chapter 13 reports that any cumulative visual effects experienced (combined or sequentially) as a result of views of with the other cumulative developments are in line with what is clearly envisioned in planning and development policy for the areas within which these developments are located, given that all developments are aligned with the zoning of these lands in the GCDP.

To conclude, likely landscape and visual effects anticipated from the Proposed Development are not deemed to be significant. Considering the zoning of these lands, residual effects upon the landscape and visual amenity are deemed to be acceptable and in line with the sustainable development of the area.

1.14 Major Accidents and Natural Disasters

This chapter of the 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 the occurrence of major accident and/or disaster during construction was identified as 'Contamination' of the Proposed Development site and risk of 'Fire/Explosion' during construction and operation.

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 and Traffic

This chapter of the EIAR addresses the likely significant effects of the Proposed Development on transportation infrastructure, and on Water and Other Services, which are economic assets of human origin.

1.15.1 Traffic and Transportation

An assessment was undertaken to establish the likely traffic related effects on the surrounding road network of the additional traffic volumes that would be generated by the Proposed Development at Knocknacarra, Galway.

The Proposed Development is located in Knocknacarra, which is connected served by a high-quality road network to the surrounding area.

Impacts of the Proposed Development

The increase in traffic volumes, as a result of construction phase 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 development has the potential to have the largest impact. However, based on the assessment carried out in the Traffic and Transportation Assessment and in Chapter 15 of the EIAR, it is considered that in general, the traffic generated by the Proposed Development in Knocknacarra, Co. Galway will be adequately accommodated on the local highway network in the vicinity. The junctions are predicted to operate below capacity without the development traffic in the future design years.

1.15.2 Other Material Assets

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

The area where the Proposed Development will take place is urban in nature. The site itself is predominantly comprised of areas of brownfield and low intensity agricultural grassland. Areas of stone walls and treelines are also present.

The project was assessed for the potential to affect the following material assets:

- **Electricity and Gas**: There are no major power lines or gas pipelines on the site. Some small power lines serve nearby homes, but the Proposed Development isn't expected to

affect them. If any services are found during early work, they'll either be left alone or moved with the help of the relevant utility companies.

- **Telecommunications**: There are no known underground phone or internet cables on the site. An overhead line runs over the site in one section, but it's not expected to be disturbed. If it needs to be moved, it will be done in coordination with the relevant provider.
- **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. A Confirmation of Feasibility Letter has been issued by Uisce Eireann.
- **Sewerage and Wastewater**: Wastewater will be disposed of via new connections to existing adjacent infrasturcture.
- **Land Use**: The land is currently used for low intensity grazing and brownfield
- **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.

On the basis of the assessment carried out in Chapter 15, the Proposed Development will have no impact on built services and waste management.

1.16 Interactions of the Foregoing

Chapters 5 to 14 of this EIAR identify the potential significant environmental effects that may occur in terms of Population and Human Health, Biodiversity (Flora and Fauna), Land, Soils and Geology, Water (Hydrology and Hydrogeology), Air, Climate, Noise and Vibration, Landscape and Visual, Cultural Heritage (Archaeological, Architectural and Cultural Heritage) and Material Assets (Roads and Traffic, and Built Services), as a result of the Proposed Development. All of the potential significant effects of the Proposed Development and the measures proposed to mitigate them have been outlined in the main 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 of interactive effects may exacerbate the magnitude of the effects or ameliorate them or have a neutral effect. A matrix is presented in Chapter 16 of the EIAR to identify 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 effects have been identified, appropriate mitigation is included in the relevant sections (Chapters 5-14) of the EIAR.

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