2 NON-TECHNICAL SUMMARY

This Environmental Impact Assessment report (EIAR) has been prepared to support the proposed Part X planning application for residential development and associated infrastructure on lands in the Clonburris SDZ within the townlands of Kishoge, Esker South, Grange, and Balgaddy, Clonburris, Dublin 22.

The EU Environmental Impact Assessment (EIA) Directive (Directive 2011/92/EU, as amended by Directive 2014/52/EU) requires the production of a Non-Technical Summary as part of the production of an EIAR. The Non-Technical Summary ensures that the public is made aware of the environmental implications of any decisions on new developments to take place. The Non-Technical Summary is laid out in a similar, but summarised format to the main EIAR, describing the project, existing environment, impacts and mitigation measures.

Assessments have been conducted in an integrated, collaborative and analytical process in accordance with relevant guidelines on the environmental topics to be examined. They seek to identify the potential for significant adverse environmental impacts arising from the proposed project. Where significant adverse environmental impacts have been identified as potentially occurring during the construction and operational phases of the development, specified ameliorative, remedial or reductive measures are identified.

This chapter has been prepared by Eleanor Mac Partlin, EIAR Manager, with assistance from Niamh Robinson, EIAR Co-ordinator and Ian Doyle, EIAR Assistant, all at Stephen Little and Associates. Eleanor is the Associate Director of Stephen Little and Associates and has significant experience in the management and delivery of complex multidisciplinary projects, with particular experience in Town Planning and EIA. Niamh has 4 years' professional experience in the planning field, and holds a MRUP – Masters in Regional and Urban Planning. Ian has 2 years' professional experience in the planning field, and holds a Bachelor of Science (Honours) in Spatial Planning.

2.1 Purpose of the EIAR

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

2.2 A Note on Quotations

Environmental Impact Assessment Reports by their nature contain statements about the proposed development, some of which are positive and some less positive. Selective quotation or quotations out of context can give a misleading impression of the findings of the study.

Therefore, the study team urge that quotations should, where reasonably possible, be taken from the overall conclusions of specialists' section or from the non-technical summary, and not selectively from the body of the individual chapters.

2.3 The Requirement for an EIAR

The process to determine whether an EIA is required for a proposed development is called Screening. This is dependent on the type of the proposed development, mandatory legislative threshold requirements, and the significance or environmental sensitivity of the receiving environment.

The EIA Directive requires an EIA to be conducted in respect of all development projects listed in Annex I of the Directive. In Irish law, the equivalent of Annex I to the EIA Directive is Schedule 5 (Part 1) of the Planning and Development Regulations 2001 (as amended). Annex II of the EIA Directive allows EU Member States discretion in determining the need for an EIA for the classes of project prescribed, having regard to the overriding consideration that projects of the types listed that are likely to have significant effects on the environment should be subject to EIA.

The Irish equivalent of Annex II is Schedule 5 (Part 2) of the Planning and Development Regulations 2001, which sets mandatory thresholds for each project class. Class 10 relates to 'Infrastructure Projects' and requires that the following classes of project (among others) be subject to EIA: **Construction of more than 500 dwelling units** (Class 10(b)(i)); and '**Urban development which would involve an area greater than** 2 hectares in the case of business district, **10 hectares in the case of other parts of a built-up area** and 20 hectares elsewhere' (Class 10(b)(iv)).

In respect of the above, the proposed development includes 1,252 no. dwellings in total, exceeding the mandatory EIA threshold of 500 no. dwellings. Furthermore, the cumulative site area of the proposed development is c. 29.4 ha, exceeding the mandatory EIA threshold of 10 ha for urban development in a built up area.

For these reasons, an EIAR has been prepared for the proposed development and is submitted as part of the Part 10 planning application.

2.4 Description of Proposed Development- Site 3

The proposed development at Site 3 of the Application Site comprises:

580no. residential units in a mix of house, apartment, duplex and triplex units comprising 1-bedroom, 2-bedroom and 3-bedroom typologies;

a 2-storey childcare facility; and,

all associated and ancillary site development and infrastructural works including: surface level car parking, bicycle parking, hard and soft landscaping and boundary treatment works, including public, communal and private open space, public lighting, bin stores and foul and water services.

Vehicular, pedestrian and cycle access to the site is proposed from Adamstown Avenue and the Northern Link Street (permitted under Reg. Ref. SDZ24A/0033W). Pedestrian, cycle and vehicular access is also provided from the existing entrance at Tullyhall Rise.

A pedestrian and cycle access is provided from the permitted green link under Reg. Ref. SDZ24A/0033W, located adjacent to Lucan East Educate Together National School.

A new pedestrian access is proposed from Rossberry Park.

2.5 Description of Proposed Development- Site 4

The proposed development at Site 4 of the Application Site comprises:

436no. residential units in a mix of house, apartment, duplex and triplex units comprising 1-bedroom, 2-bedroom, 3-bedroom and 4-bedroom typologies;

a childcare facility and a retail unit on the ground floor of Block F;

a community pavilion building at the edge of Griffeen Valley Park;

reuse of Grange House for future employment uses; and,

all associated and ancillary site development and infrastructural works including: surface level car parking, bicycle parking, hard and soft landscaping and boundary treatment works, including public, communal and private open space, public lighting, bin stores and foul and water services.

Vehicular access to the site will be via the Southern Link Street (SLS) permitted under SDZ20A/0021.

2.6 Description of Proposed Development- Site 5

The proposed development at Site 5 of the Application Site comprises:

236 no. residential units, including 55 no. social housing units, 113 no. affordable purchase units and 68 no. cost rental units. The scheme provides for a mix of 1, 2 and 3-bedroom units in a range of dwelling typologies, as follows:

- a) 35 no. houses
- b) 110 no. duplex units
- c) 33 no. triplex units, and
- d) 58 no. apartments

The proposal also includes all associated and ancillary site development and infrastructural works including: a total of 219 no. car parking spaces at undercroft and surface level, bicycle parking, hard and soft landscaping and boundary treatment works, public, communal and private open space, public lighting, waste storage areas and foul and water services.

Vehicular access to the site will be from Thoms Omer Way and the Northern Link Street (NLS) proposed under concurrent application Reg. Ref. SDZ24A/0033W.

2.7 Description of Reasonable Alternatives (Chapter 4)

Potential alternatives to the proposed development were considered as the scheme progressed. The 'Do-Nothing' alternative was explored, with a conclusion that a do-nothing approach would be contrary to the Council's objectives to promote the development of the Clonburris Strategic Development Zone (SDZ), in which the relevant sites are located, in accordance with national, regional and local planning policy and guidance.

The SDZ is subject to the Clonburris Planning Scheme. This is a highly prescriptive document, with a wide range of design standards and objectives that must be adhered to. Each development area sub sector must accommodate a certain number of dwellings and in a certain residential density and building height. These are all expressed in terms of a range between the minimum and maximum of each of these standards. The Planning Scheme also specifies certain features of proposed development, such as principal frontages.

As such, the only alternative that could be looked at is to determine how the prescribed quantum of development (residential and non-residential) is best laid out across each development area and sub sector, and what form of residential development is best to do this; i.e. house, duplex, or apartment. During the consultation with South Dublin County Council, as the local planning authority, in respect of the proposed development, a number of design iterations were presented, discussed and amended where necessary to meet the terms of the approved Clonburris SDZ Planning Scheme.

The development as now proposed is considered to have arrived at an optimal solution by making efficient use of zoned, serviceable lands, whilst also addressing the potential impacts on the environment relating to residential, visual, natural and environmental amenities and infrastructure.

It is considered that the proposed development, being consistent with relevant statutory planning policy, minimises the potential for significant adverse environmental impacts.

2.8 Population and Human Health (Chapter 5)

2.8.1 Introduction

This chapter has been prepared by AWN Consulting Ltd and assesses and evaluates the likely impacts of the Proposed Development on population and human health.

2.8.2 Methodology

This chapter evaluates the effects, if any, which the development has had or will have on Population and Human Heath as defined in Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022) and European Commission (EC), Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment (EU, 2017) this chapter has considered the "existence, activities and health of people" with respect to "topics which are manifested in the environment such as employment and housing areas, amenities, extended infrastructure or resource utilisation and associated emissions".

The assessment of significance is a professional appraisal based on the sensitivity of the receptor and the magnitude of the effect.

2.8.3 Baseline Environment

The Proposed Development site is located in the Local Authority Area of South Dublin County Council (SDCC), and in the electoral divisions (EDs) of Lucan-Esker (267100), Clondalkin-Cappaghmore (267048) and Clondalkin-Dunawley (267049). The area selected for the consideration of baseline Human Health and demographic information has been defined as the EDs containing or within 1 km of the Proposed Development site. The additional EDs included are Clondalkin-Rowlagh (267052), Lucan-St Helen's (267103) and Newcastle (267107), all of which are also located within the SDCC Local Authority Area.

As per the Clonburris SDZ Planning Scheme (2019), the Proposed Development lies predominately in land use areas designated as 'Primarily Residential', as well as smaller areas of 'Open Space Areas' and 'Mixed-Use – Retail, Community and Residential'. The features of the Proposed Development have been considered against the land uses 'permitted in principle' and 'open for consideration' under these three land use designations, and the Proposed Development has been found to fully align with the same.

The sensitivity of the surrounding area has been considered based on the details of the published data available from the Central Statistics Office (CSO) and Pobal. Two EDs have experienced population growth at a significantly higher rate than the state overall. Three EDs in the study area have experienced population growth at a slower pace than the state overall. In contrast, the ED of Clondalkin-Dunawley has seen a population decline compared to both the rest of the Study Area and the state. The Pobal HP Deprivation Index reflects a mixed level of Population Sensitivity (Deprivation) within the Study Area: three EDs have low sensitivity, two EDs have moderate sensitivity, and one ED demonstrates high sensitivity.

There is a low age dependency ratio, therefore a large proportion of the population is within working age, implying a higher degree of self-sufficiency and resilience to change. The information presented for the study area shows a high proportion [43.48–57.92%] describes their health status as 'Very Good' and a low proportion as 'Bad' or 'Very Bad'. The data show that the study area has three EDs with a higher percentage of persons with a disability than the national average; indicating that for persons within the area there are greater restrictions on daily activity than the national average.

Taking these factors into consideration, it can be concluded that the population in the study area exhibits a relatively moderate sensitivity to change, categorising it with regard to the criteria set out in Figure 5.2 of Chapter 5 as having a Moderate population sensitivity.

2.8.4 Potential Impacts of the Proposed Development

Construction Phase

Construction will have an indirect positive effect on support industries such as builder suppliers, construction material manufacture, maintenance contracts, equipment supply, landscaping and other local services. There will also be a need to bring in specialist workers on a regular basis that may increase the estimated working population at times. Specialists are only likely to stay for shorter periods depending on the nature of the work. The construction phase, therefore, is considered to have the potential to have a **positive, slight, short term** impact on the economy and employment of the local and wider area.

Visual impacts and amenity impacts perceived by individual persons are highly subjective and difficult to characterise. However, generally, the effects would be negative since construction is an inherently, unavoidably unsightly activity. It is considered that the overall impact on the community will be **negative, slight** to **moderate** and **short term** during the construction phase.

No human health risks associated with long term exposure to contaminants (via direct contact ingestion or inhalation) resulting from the proposed development are anticipated. A reduction in

water quality via unmitigated pollutants entering to the Griffeen River and the downstream River Liffey has the potential to lead to negative impacts on human health and populations. Hydrocarbons and petroleum products for example have the greatest risk for human health when they are in drinking water. However, there are not understood to be any potable abstractions from surface water or groundwater downstream of the site. Therefore, there is not considered to be any significant risk to human health associated with impact to water receptors. Therefore, on this basis, in the absence of mitigation measures the potential impacts during the construction phase on human health and populations due to changes to the geological, soils, hydrogeological and hydrological environment are **neutral, imperceptible** and **short term**.

The greatest potential impact on air quality during the construction phase of the Proposed Development is from construction dust emissions and the potential for nuisance dust and human health impacts from PM_{10} and $PM_{2.5}$ emissions. In the absence of mitigation there is the potential for **short-term**, negative and not significant impacts to human health from air quality.

As detailed in Chapter 9 - Air (Noise and Vibration), in the absence of mitigation at Noise Sensitive Locations (NSLs) located beyond 40m from the construction works, the Critical Noise Threshold (CNT) will not be exceeded, resulting in **short-term**, **negative** and **not significant** impacts. Regarding Site 3 and Site 5, there are some NSLs within 40m of the construction works. At the closest locations, representing the worst case, in the absence of mitigation, there is potential for **short-term**, **negative**, and **significant** to **very significant** impacts.

A significant benefit of the subject development site's characteristics is that all construction traffic vehicle parking demands can be accommodated on-site thereby minimising the impact upon the operational performance and safety levels of the adjacent public road network. Therefore, the impact on human beings and in particular road users such as local Businesses, and Residences would be **not significant, negative** and **short term.**

As stated in the Flood Risk Assessments (FRAs) submitted with the planning documentation, the majority of the site is located in Flood Zone C, with a small area of the south east corner of Site 4 located within Flood Zone B, and SUDS features will be implemented into the surface water drainage system, which will allow storage of water for the 1 in 100 year storm event plus a 20% allowance for climate change. The FRAs conclude that the residual risk is low. The potential effect is therefore imperceptible and unlikely in respect of Major Accident Hazards or Natural Disasters on Population and Human Health during the construction phase of the proposed development.

Operational Phase

Once operational, the proposed development will give rise to much needed additional residential accommodation. As outlined in Section 5.3.1, the Study Area has a growing population, in particular in Lucan-St Helen's and Newcastle EDs, which saw increases in population between 2016 and 2022 significantly higher than the state average, at 57.7% and 30.4% respectively. The operational phase of the proposed development will result in the introduction of a greater intensity and density of residential development, delivering wider public realm improvements, in accordance with national and local planning policy objectives, which seek to deliver compact growth at suitable locations. Adequate provision of high-quality housing to serve the existing and future population of the county is an important pre-requisite and contributor to the establishment and maintenance of good human / public health. The high quality design of the proposed development will contribute to a positive impact on the wellbeing of future residents. The impact on population will be **positive, moderate** and **long term.**

The Proposed Development includes a provision for public open space. In total between all three Sites, this amounts to c. 10,598sqm of public open space, consisting of local green corridors, strategic green corridors and local parks. As the proposed development site currently exists as agricultural land with no public amenity use, the introduction of these public open spaces will result in a **positive, not significant, long term** impact on local amenities.

As discussed in Chapter 12 – Landscape and Visual, the operational phase will give rise to a change in the landscape character due to change in land use. The proposed development will have a visual impact due to the introduction of new buildings, walls, boundary treatments, roads, lighting and

parking. The potential impact on the local population will be **neutral, slight** to **moderate**, and **long term.**

When operational, the Proposed Development represents an increase in hardstand. The new storm water drainage systems will include SuDS features such as permeable paving parking spaces, bioretention areas and brown roofs to provide additional storage and promote infiltration of and treatment of surface water run-off. As such, the potential for unmitigated off-site flooding as a result of the increased hardstanding areas will not have potential to impact on human health, populations, and material assets. In the absence of mitigation measures the potential impacts during the operational phase on human health and populations due to changes to the hydrogeological or hydrological environment are **neutral, imperceptible** and **long term**.

As outlined in Chapter 10 Climate (Air Quality), traffic related air emissions have the potential to impact air quality which can affect human health. A detailed air dispersion modelling assessment of traffic emissions was conducted and it was determined that emissions of air pollutants are predicted to be below the ambient air quality standards which are based on the protection of human health. Therefore, it can be determined that the impact to human health during the operational stage is **long-term, localised, negative** and **imperceptible**.

Once the proposed development is operational, there are no sources of mechanical or electrical plant associated with the building types across the proposed development with potential to emit significant audible noise levels beyond the buildings themselves (i.e. individual heat recovery systems serving the residential units where proposed). The main potential noise impact associated with the proposed development is considered, therefore, to relate to the generation of additional traffic to and from the site as a result of the new residential buildings. In the absence of mitigation, the resulting impact of noise generated during the operational phase of the proposed development on human health is likely to be **negative, imperceptible** to **not significant** and **long term**.

As outlined in Chapter 13 Material Assets (Transportation), an analysis and assessment of the impact of the proposed development on the surrounding road network was carried out using a traffic model of the affected junctions. The potential impact during operation is likely to be **negative, not significant** and **long term.**

As stated in the Flood Risk Assessments (FRAs) submitted with the planning documentation, the majority of the site is located in Flood Zone C, with a small area of the south east corner of Site 4 located within Flood Zone B, and SUDS features will be implemented into the surface water drainage system, which will allow storage of water for the 1 in 100 year storm event plus a 20% allowance for climate change. The FRAs conclude that the residual risk is low. The potential effect is therefore *imperceptible*, and unlikely, in respect of Major Accident Hazards or Natural Disasters on Population and Human Health during the Operational Phase of the Proposed Development.

2.8.5 Residual Impacts (Post Mitigation)

Following the implementation of the appropriate mitigation measures, the residual impacts during the construction phase will be:

- Businesses and Residences: positive, slight and short term;
- Landscape, Amenity and Tourism: negative, slight to moderate and short term;
- Land and Water Emissions: neutral, imperceptible and short term;
- Air Emissions: short term, direct, negative, localised and not significant;
- Noise and Vibration Emissions:
 - negative, moderate to significant and short term residual impact from construction noise during the site clearance and ground preparation phase only at NSLs adjacent to Site 3; and
 - short term, negative and not significant residual impact from construction noise for all remaining NSLs.
- Traffic and Transportation: short term, not significant and negative; and
- Major Accident Hazards and/or Natural Disasters: no residual impact.

Following the implementation of the appropriate mitigation measures, the residual impacts during the operational phase will be:

- Businesses and Residences: positive, moderate and long term;
- Landscape, Amenity and Tourism:
 - o positive, long term and not significant residual impact on amenity and tourism; and
 - o positive, slight to moderate and long term residual impact on landscape;
- Land and Water Emissions: neutral, imperceptible and long term;
- Air Emissions: long term, localised, negative and imperceptible;
- Noise and Vibration Emissions: negative, not significant and long term;
- Traffic and Transportation: negative, not significant and long term; and
- Major Accident Hazards and/or Natural Disasters: no residual impact.

The Proposed Development will result in several positive impacts. These include a positive economic impact during both the construction and operational phases of the Proposed Development, along with positive impacts regarding provision of residential units and public open spaces.

2.8.6 Cumulative Impacts

Construction Phase

In a worst-case scenario, multiple developments in the area could be developed concurrently or overlap in the construction phase and contribute to additional impacts in terms of traffic, dust, and noise.

The implementation of mitigation measures within each chapter and detailed in Section 5.6.1.; as well as the compliance of adjacent development with their respective planning permissions, will ensure there will be minimal cumulative potential for change in soil quality or the natural groundwater regime during the construction phase of the Proposed Development.

Contractors for the Proposed Development will be contractually required to operate in compliance with a project-specific CEMP and Construction Traffic Management Plan which will include the mitigation measures outlined in this EIAR. The construction phase for the overall development of the applicant owned lands would be restricted by the same binding limits for noise, dust, and emissions to water.

Operational Phase

The potential cumulative impacts of the Proposed Development during the operational phase in terms of Air Emissions, Noise generation and Traffic generation in the context of the Permitted Development are considered in Chapter 10 Climate (Air Quality), Chapter 9 Air (Noise and Vibration) and Chapter 13 Material Assets (Transportation). The assessments indicate that the Proposed Development is not likely to result in significant adverse impacts on Human Health either alone or in combination with any likely future projects.

2.9 Biodiversity (Chapter 6)

2.9.1 Introduction

This chapter assesses the impact of the proposed development at Kishoge (Sites 3, 4 and 5), on Biodiversity, with a particular focus on potential construction and operational phase impacts which may negatively affect protected designated sites, habitats and species. A series of mitigation measures have been proposed to safeguard these protected ecological features from these potential impacts, as well as to minimise negative long-term residual impacts.

2.9.2 Assessment Methodology

An extensive desktop study and a wide range of ecological surveys were conducted between August 2022 and February 2025 within the Zone of Influence (ZoI) of the proposed development. These have provided the necessary data to establish an extensive baseline on the designated sites, habitats, flora and fauna located within and adjacent to the proposed Kishoge development sites, allowing the ecological assessors to conduct a robust biodiversity impact assessment.

The ZoI for the project is based on a judgement of the likely extent of the ecological impacts on key ecological receptors (KERs), i.e., protected designated sites, habitats and species. This will vary for different KERs, depending on their sensitivities to environmental change. See below ZoI list for KERs:

- Terrestrial Impacts will be limited to the lands within the site boundary of the proposed Kishoge development sites, as well as the immediate surrounding environs.
- Surface Water Given difficulty to precisely predict the likely significance of water-borne pollutants as they travel downstream from the pollution point source, designated sites (e.g. Liffey Valley pNHA), protected habitats or species located downstream of the watercourse which pass through the footprint of the proposed Kishoge development sites, namely the Kilmahuddrick Stream, will be considered to be within the surface water and groundwater-to-surface water Zol.
- Groundwater As the characteristics of the aquifer underlying the proposed Kishoge development sites result in groundwater flow paths only extending a few hundred metres, the ZoI for groundwater was set at 300m.
- Air KERs within a 250m buffer zone of the development were considered, as per the Institute of Air Quality Management Guidance on the Assessment of Dust from Demolition and Construction (2024).
- Protected Fauna and Flora The Zol on all fauna and flora populations will be assessed with consideration to utilised habitat degradation, the Zol of which is determined by the terrestrial, surface water, groundwater and air impact pathways above. Therefore, the Zol for protected fauna and flora ranges from 300m (habitat degradation for all flora and fauna) to 400m (specific wintering bird disturbance buffer), with the addition of downstream impact buffer in the aquatic habitats.

2.9.3 Baseline

The proposed development sites are comprised of a wide range of habitats within the sites, including artificial urban landscapes, amenity grasslands, dry meadows, scattered tree and parkland, mixed broadleaved / conifer, and immature woodlands, drainage ditches, reed swamps, marsh, hedgerows, treelines and scrub; as well as the Kilmahuddrick Stream. Additionally, the sites are also closely neighboured by agricultural grassland, reed swamp, wet willow-alder-ash woodland and the Grand Canal pNHA.

A total of five designated European Natura 2000 sites, five proposed Natural Heritage Areas, two Ramsar sites, one Special Amenity Area Order site, and one UNSECO site were determined to be within the Zol of the proposed Kishoge development sites. A diverse range of faunal and floral KERs (Green-listed, Amber-listed, Red-listed, Qualifying Interest and Special Conservation Interest species) were recorded to be present within the Zol of the three development sites, as well as ten invasive non-native species, two of which are listed on the First and/or Second Schedule of S.I. No. 374/2024 – European Union (Invasive Alien Species) Regulations 2024.

2.9.4 Predicted Impacts

In the absence of mitigation measures, the potential construction-based impacts anticipated from the proposed Kishoge development sites on the existing biodiversity / ecological features within and adjacent to the sites are those associated with direct habitat loss and fragmentation; physical degradation of habitats; disturbance and displacement of protected faunal species (visual and audible); pollution of surface and groundwater networks; air pollution; and the spread of invasive non-native species.

The potential operational impacts anticipated from the proposed Kishoge development sites on the existing biodiversity / ecological features are mainly focused on the degradation of valued habitats through anthropogenic disturbance and the potential displacement and injury of protected faunal species, such as Otter, Badger, local Bat species, Snipe and Common Frog.

2.9.5 Mitigation Measures

While impacts such as habitat loss and fragmentation are unavoidable due to the physical footprint of the proposed development sites, the remainder of the potential impacts will be mitigated for through a series of highly detailed mitigation measures, and avoidance wherever possible.

A site-specific Construction and Environment Management Plan (CEMP) and Construction Method Statement (CMS) will be submitted along with the EIAR. The CEMP will outline the procedures and plans required in order to mitigate against construction-based potential adverse impacts on KERs within the ZoI. A non-exhaustive list of the construction phase plans and mitigations is set out below:

- Surface Water Management Plan;
- Dust Management Plan;
- Invasive Species Management Plan;
- Protection and/or relocation of ecological features to be retained within and adjacent to the works site (e.g., fencing off of trees to be retained); and
- Seasonal restrictions for vegetation clearance and constructions works in sensitive ecological areas (e.g., key foraging areas and watercourses) in order to safeguard faunal groups during sensitive times of year (e.g., wintering and breeding bird species and fish species).

A combination of on-going and new plans and mitigation measures forms the basis of the operational phase ecological safeguards. A non-exhaustive list of these protective measures is shown below:

- Invasive Species Management Plan (on-going);
- An ecologically reviewed lighting design plan for the developments, which ensures continued landscape connectivity for local bat species;
- The post-construction monitoring of select faunal groups, as well as the rare and protected floral species; and
- The formation of new habitats including SUDs-based habitats, the reinstatement of retained habitats and enhancement of newly created habitats, through the Kishoge developments' landscape and planting plans.

2.9.6 Residual Impacts

The three Kishoge development sites will not result in any residual likely significant effects on any of the designated sites within the Zol. In relation to the flora and fauna, the construction and operational phase mitigations, along with the landscape plan will ensure that the temporarily / short-term impacted habitats will return to their original condition or an enhanced condition in some cases. Once the ecological lag of the newly landscaped features has passed and the habitats matured, with them offering a full range of ecosystem services for local fauna, the Kishoge development sites will result in no significant negative impacts to any specific KERs within the Zol, with the significance of negative long-term impacts ranging from 'Not significant' to 'Moderate', and the significance of positive impacts ranging from 'Not significant' to 'Slight'.

2.10 Land, Soil & Geology (Chapter 7)

2.10.1 Introduction

This chapter was prepared by DBFL Consulting Engineers and assesses and evaluates the effect of the proposed development on the subject site's geology, soil and land during the construction and operation of the proposed development. It also identifies the characteristics, potential effects, mitigation measures and residual effects arising from the proposed development as well as earthworks proposed on the subject site including cut and fill works required.

2.10.2 Methodology

The assessment of the potential effect of the activity on geology, soil and land was carried out according to practice and the methodology specified in the available guidance documents. Various bodies including Transport Infrastructure Ireland (TII, formally National Roads Authority); the Institute of Geologists Ireland (IGI); Construction Industry Research and Information Association (CIRIA); the Environmental Protection Agency (EPA); and South Dublin County Council (SDCC), provide detailed guidance on the preparation and content required for an EIAR in relation to the geological environment.

The following sources of information were used in the completion of this assessment:

- Listed organization guidance documents.
- Site visit.
- Civil Engineering Drawings.
- Ordnance Survey of Ireland's (OSI) mapping and aerial photography.
- Geological Survey of Ireland (GSI) online maps and databases.
- Teagasc soil and sub-soil data.
- Eastern CFRAMS Flood Mapping from OPW.
- EPA online maps and databases.
- Geotechnical Site Investigation Report.

2.10.3 Baseline Environment

Existing Site Conditions

The subject sites are spread across the Kishoge area within the Clonburris SDZ. They are located both sides of the Kildare/Cork Railway line, with Sites 3 and 5 north of the railway line and Site 4 to the south.

Site 3: The lands at Site 3, measuring approximately 34 acres, are currently characterised by transitional agricultural landscapes and border mature housing developments to the west and north. An existing ESB substation is located within the site, northwest of Adamstown Avenue.

Site 4: The lands at Site 4, measuring approximately 26 acres, currently have both an emergency traveller accommodation site (Lynch's Lane) and a South Dublin County Council Parks Department depot. A plantation of semi-mature trees comprises much of the north of the site. The Kildare/Cork Railway line forms the northern boundary, with Lynch's Lane marking the southern extent.

Site 5: The lands at Site 5 comprise two separate plots on opposing sides of the E-W trending Thomas Omer Way (L1059). The plot to the south of the road measures almost 10 acres and is bounded by the R136 to the west and by Lynch's Lane (L5218) to the east. The site tapers to the south where it meets the Kildare/Cork Railway line at Kishoge rail station. North of Thomas Omer Way, a 3.5 acre greenfield site is wedged between the L1059 to the south and Foxborough housing estate to the north. New social housing developments – Griffeen Court and Omer Walk – have recently been constructed east of the site.

Topography

Overall, the topography of the subject sites is relatively flat throughout, with some localised gradients on all sites. Site 3 has a slight fall from the southeast, with the lowest area on the northwest area of the site. Site 4 shows a steady fall from south to north. Site 5 north of Thomas Omar Way is overall relatively flat, and south of Thomas Omer Way the site falls north to south.

<u>Topsoil</u>

Where naturally occurring topsoil was found on Site 3, it was present in layers of thickness ranging from 200mm to 450mm. On Site 4, topsoil was found to be present in layers ranging from 100mm to 500mm thick. On Site 5, topsoil was found to be present in layers around 400mm thick.

Bedrock Geology

The proposed development is underlain in its entirety by limestone. The bedrock is described in geological mapping as a Visean Limestone and calcerous shale and is part of a formation known as the Lucan Formation.

Quaternary & Soil

The GSI online mapping service indicates the quaternary deposits underlying the subject site are comprised of clay-dominant tills derived from limestones. The Teagasc Soils and Subsoils Map from the online Geological Survey of Ireland mapping service shows that the sites are underlain with "deep well drained material" soils and "mineral poorly drained" soils.

Hydrogeological Aspects

Limestone bedrock underlies the entire site. The bedrock is described in geological mapping as a Dark Limestone & Shale and is part of a formation known as the Lucan Formation.

The bedrock aquifer underlying the entire site is classified by Geological Survey Ireland as a "Locally Important Aquifer – Bedrock which is Moderately Productive only in Local Zones".

Contaminated Land

Site 3: Asbestos was not detected in any of the samples tested. The samples were classified largely as non-hazardous, Category A – 'Meets Soil Recovery Criteria' and Category B-1 – 'Suitable for disposal/recovery to inert landfill'.

Site 4: Potential asbestos associated with Grange House and the Parks Depot buildings. Other than that, the samples were classified as non-hazardous Category A – 'Meets Soil Recovery Criteria'.

Site 5: Asbestos was not detected in any of the samples tested. The samples were classified as non-hazardous, Category A – 'Meets soil Recovery Criteria' and Category B-2 – 'Suitable for disposal/recovery to Inert Landfill

2.10.4 Potential Impacts of the Proposed Project

Construction Phase

Direct

The predicted direct impacts of the proposed development on the land and soils of the surrounding environment are assessed in this section for the construction phase.

It is anticipated that the main construction activity impacting geology, soils and land will comprise of excavating, stripping, storing and moving topsoil.

It is anticipated that there is significant capacity to accommodate soil volumes within the gardens and landscape areas.

Excavation of sub-soil layers will result in a negative effect from the exposure of the underlying subsoil layers and rock to the effects of weather and construction traffic which may result in subsoil erosion and the generation of sediment runoff.

Based on available information subsoil is expected to be generally suitable for reuse as non-structural fill (e.g., build-up of back gardens areas or build-up of open space).

<u>Indirect</u>

Construction traffic, particularly at access points have the potential to cause indirect negative effects from rutting of topsoil and any exposed subsoil, potentially causing erosion, sediment runoff or dust.

During the construction phase there is also a risk of accidental pollution from the sources such as oils, fuels, cement and concrete spills.

Worst Case Scenario

There is a potential risk of localised contamination of the land and soils due to the accidental release of diesel fuel or similar hazardous materials during the construction phase, through the failure of secondary containment or a material handling accident on the site.

A potential risk to human health due to the associated works during construction is the direct contact, ingestion or inhalation of receptors such as oils and paints. No human health risks associated with long term exposure to contaminants (via direct contact ingestion or inhalation) resulting from the proposed development are anticipated.

Operational Phase

Direct

Direct operational effects are those associated with the completed development including final surface treatments, conveyance of traffic flows, occupation of buildings and all operation and maintenance activities. The effects to the land and soils from the operational phase of the project will be neutral, imperceptible, and permanent.

Indirect

No indirect impacts on the land and soils are predicted for the operational phase.

Worst Case Scenario

Once the development is completed, the operational impacts on the land and soils would be minimal. The biggest risk item is cross contamination of ground water from the operational phase of the development from accidental oil spillages.

2.10.5 Residual Impacts (Post-Mitigation)

The impact on land, soil, geology, and hydrogeology from accidental spillages is predicted to be minimal when stored and used in a responsible manner. After implementation of the mitigation measures for the construction phase, the proposed development will not give rise to any significant long term adverse impact.

Residual Impacts from earthworks haulage and the risk of contamination of groundwater are deemed to be of minor risk. The residual impacts for a residential housing development, creche and open space are deemed to be imperceptible post construction (during the operational phase).

Potential residual impacts of the proposed development on land, soils and geology will be short term and not significant after the mitigation measures are implemented.

2.11 Water (Chapter 8)

2.11.1 Introduction

This chapter assesses and evaluates the potential impacts of the development on the hydrological aspects of the sites and surrounding areas.

2.11.2 Methodology

This chapter evaluates any potential effects of the development on hydrology as defined in the Environmental Protection Agency (EPA) 'Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (EPA 2017). In addition, the document entitled 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the National Roads Authority (NRA, 2009) is referenced where the methodology for assessment of impact is appropriate.

2.11.3 Baseline Environment

Existing Site Conditions

The subject sites are spread across the Kishoge area within the Clonburris SDZ. They are located both sides of the Kildare/Cork Railway line, with Sites 3 and 5 north of the railway line and Site 4 to the south.

Site 3: The lands at Kishoge Phase 3, measuring approximately 34 acres, are currently characterised by transitional agricultural landscapes and border mature housing developments to the west and north. An existing ESB substation is located within the site, northwest of Adamstown Avenue.

Site 4: The lands at Kishoge Phase 4, measuring approximately 26 acres, currently have both an emergency traveller accommodation site (Lynch's Lane) and a South Dublin County Council Parks Department depot. A plantation of semi-mature trees comprises much of the north of the site. The Kildare/Cork Railway line forms the northern boundary, with Lynch's Lane marking the southern extent.

Site 5: The lands at Kishoge Phase 5 comprise two separate plots on opposing sides of the E-W trending Thomas Omer Way (L1059). The plot to the south of the road measures almost 10 acres and is bounded by the R136 to the west and by Lynch's Lane (L5218) to the east. The site tapers to the south where it meets the Kildare/Cork Railway line at Kishoge rail station. North of Thomas Omer Way, a 3.5 acre greenfield site is wedged between the L1059 to the south and Foxborough housing estate to the north. New social housing developments – Griffeen Court and Omer Walk – have recently been constructed east of the site.

<u>Topography</u>

Overall, the topography of the subject sites is relatively flat throughout, with some localised gradients on all sites. Site 3 has a slight fall from the southeast, with the lowest area on the northwest area of

the site. Site 4 shows a steady fall from south to north. Site 5 north of Thomas Omar Way is overall relatively flat, and south of Thomas Omer Way the site falls north to south.

Hydrology & Hydrogeology

The overall Clonburris SDZ is within the River Liffey Catchment. The study area affects two primary hydrological sub-catchments, the Griffeen and the Camac. The subject site for this development is located within the "Liffey" sub-catchment (WFD Ref: Liffey_SC_090). The Grand Canal is located to the south, the River Griffeen to the west, and the River Camac to the east of the proposed development.

Limestone bedrock underlies the entire site. The bedrock is described in geological mapping as a dark Limestone and Shale (calp) and is part of a formation known as the Lucan Formation. The bedrock aquifer underlying the entire site is classified by Geological Survey Ireland as a "Locally Important Aquifer – bedrock which is moderately productive only in local Zones".

Historical flood maps/data indicate there are no recorded flood events within the proposed site boundaries. The closest recorded recurring flood events are at the Beech Row Bungalows, approximately 1600m to the east of the sites, and Cappaghmore Culvert, located approximately 2000m to the east of the sites.

The Eastern CFRAM (Catchment Flood Risk Assessment and Management) study details the predicted risk for a variety of fluvial and coastal flood scenarios. The mapping does not include the watercourse reaches affected by the proposed scheme and only maps downstream flooding.

The OPW undertook an Irish Coastal Protection Strategy Study (ICPSS) which produced coastal/tidal flood extents maps for the Irish coastline from a 0.5% AEP tidal flood level. This map indicates that the site is far outside the extents of the coastal/tidal flood zone.

Site-specific Flood Risk Assessments have been conducted for Sites 3, 4 and 5.

2.11.4 Potential Impacts of the Proposed Project

Construction Phase

The potential effects that may arise during the construction phase may include: contamination from surface water runoff, improper use of foul drainage, cross contamination of potable water, rainwater pumped from excavations, accidental spills, concrete and wash runoff, culverts may increase suspended sediments in watercourse, alkaline contamination from concrete, increased runoff due to stripping vegetation.

Operational Phase

Potential operational phase effects may include: increased surface water runoff from increased impermeable surface area, accidental spills and leaks may discharge into local drainage networks, contamination of surface water from foul sewer leaks.

There is not considered to be any significant risk to human health associated with impact to water receptors. There are no predicted effects to the water environment should the proposed development not proceed.

2.11.5 Residual Impacts (Post-Mitigation)

It is considered that by implementing the proposed construction and operational phase mitigation measures, the significance of any impacts will be deemed "Not Significant" relative to hydrological/hydrogeological receptors. Given the relatively standard nature of the works involved the likelihood of a "worst case" event is extremely low.

2.12 Air (Noise & Vibration) (Chapter 9)

2.12.1 Introduction

AWN Consulting Limited conducted an assessment of the likely impact of noise and vibration associated with the proposed development.

The baseline environment was quantified by undertaking environmental noise surveys, the results of which are presented within Chapter 9 of the EIAR. The baseline noise surveys determined that the noise environment was largely dominated by noise from local road networks, rail networks and intermittent aircraft.

2.12.2 Potential Impact of the Proposed Development

Construction Phase

Construction noise impacts will vary at various receivers throughout the construction phase of the proposed development. The main construction activities in relation to noise are:

- Site Clearance and Ground Works
- General Construction

Without mitigation the worst-case effect of the construction phase will be short term, negative and significant to very significant at site 3, short term, negative and not significant at site 4, and short term, negative and significant to very significant at site 5.

Operational Phase

The noise impacts relating to the operational phase of the proposed development will relate to:

- Mechanical Plant and Services
- Additional Traffic on Public Roads

The noise impacts related to mechanical plant and services will be neutral, not significant, and longterm, provided they are designed to meet the operational limits set by the guidelines and recommendations within the EIAR chapter. The noise impacts related to additional road traffic on public roads will be long-term, negative, and not significant. A full inward noise impact relating to the noise incident on the proposed development sites is included within Chapter 9.

2.12.3 Mitigation and Residual Effects

Construction Phase

Mitigation measures to be implemented during the construction phase are discussed within the full EIAR, these measures include but are not limited to:

- Selection of quiet plant;
- Control of noise sources;
- Screening;
- Hours of work;
- Liaison with the public; and
- Monitoring.

After mitigation, it is anticipated that the residual worst-case effect of the construction phase noise will be short-term, negative, and moderate to significant at site 3 and short term, negative and slight to moderate at the remaining sites.

Operational Phase

Mitigation measures to be implemented during the operational phase are discussed within the full EIAR. These measures mainly relate to the selection of quiet plant as well the suppression of break out noise from items of mechanical plant, where required for apartment buildings. The residual operational noise impact in relation to the mechanical plant and services noise will be neutral, imperceptible and long term.

The residual impact of the traffic on the surrounding road will be negative, not significant and long term.

The EIAR provides a detailed Inward Impact Assessment to account for the noise climate taking into account the local road networks and rail networks likely to affect the proposed development. The Inward Impact Assessment within the EIAR provides details on acoustic performance to glazing for various facades within the proposed development.

2.12.4 Cumulative Impact of the Proposed Development

Construction Phase

In the event that construction activities at nearby sites are taking place concurrently with the construction of the proposed development, there is potential for cumulative noise impacts to occur. Due to the nature of construction works associated with each site of the proposed development, noise levels from this site will dominate the noise environment when occurring in proximity to the closest noise sensitive locations along its immediate boundary. The noise contribution from other construction sites would need be equal to those associated with the closest site in order to result in any cumulative effect.

Operational Phase

The noise limits set within the EIAR are designed to avoid any significant increase in the prevailing background noise environment. There is not expected to be a cumulative effect in relation to either operational mechanical plant noise or road traffic noise during the operational phase of the proposed development.

2.13 Climate (Air Quality) (Chapter 10)

2.13.1 Introduction

AWN Consulting Limited conducted an assessment of the likely impact on air quality associated with the proposed development.

2.13.2 Baseline Environment

Baseline data and data available from similar environments indicate that levels of nitrogen dioxide (NO_2) , particulate matter less than 10 microns (PM_{10}) and particulate matter less than 2.5 microns $(PM_{2.5})$ are generally in compliance with the current National and European Union (EU) ambient air quality standards.

2.13.3 Potential Impact of the Proposed Development

Construction Phase

An assessment of the potential dust impacts as a result of the construction phase of the proposed development was carried out based on the UK Institute for Air Quality Management 2024 guidance document 'Guidance on the Assessment of Dust from Demolition and Construction'. This established the sensitivity of the area to impacts from construction dust in terms of dust soiling of property, human health effects and dust related ecological effects. The surrounding area was assessed as being of high sensitivity to dust soiling and of low sensitivity to dust-related human health and ecological effects.

The sensitivity of the area was combined with the dust emission magnitude for the site under four distinct categories: demolition, earthworks, construction, and trackout (movement of vehicles) in order to determine the mitigation measures necessary to avoid significant dust impacts. It was determined that there is at most a high risk of dust related impacts associated with the proposed development. In the absence of mitigation there is the potential for *direct, short-term, localised, negative, slight* and *not significant* impacts to air quality.

In addition, construction phase traffic emissions have the potential to impact air quality, particularly due to the increase in the number of HGVs accessing the site. Construction stage traffic did not meet the scoping criteria for a detailed modelling assessment outlined in Transport Infrastructure Ireland's 2022 guidance document 'Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106'. As a result, a detailed air assessment of construction stage traffic emissions has been scoped out and the construction stage traffic emissions will have an **imperceptible**, **short-term** and **neutral** impact on air quality.

Operational Phase

Operational phase traffic has the potential to impact air quality due to vehicle exhaust emissions as a result of the increased number of vehicles accessing the site. Operational stage traffic emissions were calculated at representative worst-case receptors in the area and it was determined that concentrations of NO₂, PM_{10} and $PM_{2.5}$ will increase by an imperceptible amount as a result of the proposed development. Operational stage traffic emissions will have a *long-term, direct, negative* and *not significant* impact on air quality.

2.13.4 Mitigation and Residual Effects (Post-Mitigation)

Construction Phase

Detailed dust mitigation measures are outlined within Section 10.6 of Chapter 10 to ensure that no significant nuisance as a result of construction dust emissions occurs at nearby sensitive receptors. Once these best practice mitigation measures, derived from the Institute for Air Quality Management 2024 guidance 'Guidance on the Assessment of Dust from Demolition and Construction' as well as other relevant dust management guidance, are implemented, the impacts to air quality during the construction of the proposed development are considered **short-term**, **direct**, **negative** and **not significant**, posing no nuisance at nearby sensitive receptors (such as local residences).

Operational Phase

As the predicted concentrations of pollutants will be imperceptible no mitigation is required. The impact to air quality has been assessed as *long-term, localised, negative* and *not significant*.

2.13.5 Cumulative Impact of the Proposed Development

Construction Phase

There is the potential for cumulative impacts to air quality should the construction phase of the proposed development coincide with that of other developments within 500m of the site. A review of proposed/permitted developments in the vicinity of the site was undertaken to determine the potential for cumulative impacts.

The dust mitigation measures outlined in Section 10.6.1 of Chapter 10 will be applied during the construction phase which will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the proposed development and the permitted cumulative developments are deemed *short-term, localised, negative* and *not significant.*

Operational Phase

The direct impacts of the operational phase on air quality associated with the proposed development are predicted to be imperceptible. Cumulative impacts are considered *direct, long-term, negative* and *not significant.*

Overall no significant impacts to air quality are predicted during the construction or operational phases of the proposed development.

2.14 Climate (Climate Change) (Chapter 11)

2.14.1 Introduction

AWN Consulting Limited conducted an assessment of the likely impact on climate associated with the proposed development.

2.14.2 Baseline Environment

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with European Union's Effort Sharing Decision "EU 2020 Strategy" (Decision 406/2009/EC). The EPA state that Ireland had total GHG emissions of 60.6 Mt CO2e in 2023. This is 2.27 Mt CO2e higher than Ireland's annual target for emissions in 2023. EPA projections indicate that Ireland has used 63.9% of the 295 Mt CO2e Carbon Budget for the five-year period 2021-2025. Further reduction measures are required in order to stay within the budget requirements.

2.14.3 Potential Impact of the Proposed Development

The potential impacts on climate have been assessed in two distinct ways – a greenhouse gas assessment (GHGA) and a climate change risk assessment (CCRA). The GHGA quantifies the GHG emissions from a project over its lifetime and compares these emissions to relevant carbon budgets, targets and policy to contextualise magnitude. The CCRA considers a project's vulnerability to climate change and identifies adaptation measures to increase project resilience.

Greenhouse Gas Assessment

GHG emissions associated with the proposed development are predicted to be a small fraction of the relevant sectoral 2030 emissions ceilings. The proposed development will incorporate some mitigation measures which will aim to reduce climate impacts during construction and once the development is operational. At a minimum these include the Nearly Zero Energy Building (NZEB) compliance and targeting a Building Energy Ratio (BER) in line with the NZEB requirements.

GHG emissions during the operational phase due to road traffic were assessed. The changes in traffic volumes associated with the operational phase of the development were substantial enough the meet the assessment criteria requiring a detailed climate modelling assessment, as per Transport Infrastructure Ireland (TII) 2022 guidance "*PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document*". There will be a slight increase in the traffic on the local road network which will result in some minor increases in CO2 emissions. These have been assessed as a small fraction of Ireland's transport sector 2030 emissions ceiling.

A number of sustainability measures have been incorporated into the design of the development to ensure impacts to climate are reduced.

Climate Change Risk Assessment

A CCRA was conducted to consider the vulnerability of the proposed development to climate change, as per the TII 2022 PE-ENV-01104 guidance. This involves an analysis of the sensitivity and exposure of the development to future climate hazards which together provide a measure of vulnerability. The hazards assessed included flooding (coastal, pluvial, fluvial); extreme heat; extreme cold; drought; extreme wind; lightning, hail and fog; wildfire and landslides. The proposed development is predicted to have at most low vulnerabilities to the various climate hazards and therefore climate change risk is not considered significant.

Overall, no significant impacts to climate are predicted during the construction or operational phases of the proposed development.

2.14.4 Mitigation and Residual Effects (Post-Mitigation)

A number of best practice mitigation measures are proposed for the construction phase of the proposed development to ensure that impacts to climate are minimised. Design mitigation has been considered when assessing the vulnerability of the development to future climate change.

The impact to climate as a result of a proposed development must be assessed as a whole for all phases. The proposed development will result in some impacts to climate through the release of GHGs. TII reference the IEMA guidance which states that the crux of assessing significance is *"not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050".* The proposed development has been designed to reduce the impact on climate where possible during operation. The proposed development has incorporated some mitigation measures to reduce climate change impacts. Once mitigation measures are put in place, the effect of the proposed development in relation to GHG emissions is considered *direct, long-term, negative and slight* which is *not significant* in EIA terms.

In relation to climate change vulnerability, it has been assessed that there are no significant risks to the proposed development as a result of climate change.

2.14.5 Cumulative Impact of the Proposed Development

With respect to the requirement for a cumulative assessment PE-ENV-01104 states that "the identified receptor for the GHG Assessment is the global climate and impacts on the receptor from a project are not geographically constrained, the normal approach for cumulative assessment in EIA is not considered applicable. By presenting the GHG impact of a project in the context of its alignment to Ireland's trajectory of net zero and any sectoral carbon budgets, this assessment will demonstrate the potential for the project to affect Ireland's ability to meet its national carbon reduction target. This assessment approach is considered to be inherently cumulative".

As a result, the cumulative impact of the proposed development in relation to GHG emissions is considered direct, long-term, negative and slight, which is overall not significant in EIA terms.

2.15 Landscape and Visual Impact Assessment (Chapter 12)

The LVIA Report reviewed the existing landscape with respect to existing designations, views and prospects, landscape character, presence of National Monuments, location with respect to existing adjoining residential development and impacts of the proposed development on the existing landscape setting and features.

The SDZ lands, consisting of approximately 280 hectares, are located to the west of Dublin City Centre and the M50 – within the triangle between Lucan, Clondalkin and Liffey Valley. The lands are bisected from east to west by the Kildare railway line and by the Grand Canal to the south, and by two strategic roads – the Grange Castle Road (also referred to as the Outer Ring Road) in the centre of the site and the Fonthill Road to the east. The R120 Lock Road forms part of the western boundary of the lands. Grange Castle Business Park is located to the south of the SDZ lands. The Adamstown SDZ is located adjacent to the north-west boundary of the SDZ lands.

The landscape character of the sites is largely determined by the following:

The lands at Clonburris are currently characterised by transitional agricultural landscapes. Despite their location and context between the established communities of Lucan and Clondalkin, the lands have never been developed to any significant degree and retain a largely rural character. In recent years, a primary and secondary school have been constructed on the lands. A number of private residences are located on the lands, together with traveller accommodation constructed by South

Dublin County Council. There are two train stations constructed within the SDZ, the Clondalkin-Fonthill station and the Kishoge Station.

The area surrounding the sites can be characterised as follows: -

Clonburris / Kishoge is a suburban area which falls under the jurisdiction of South Dublin County Council. Clonburris / Kishoge is situated to the south of Lucan and north east of Clondalkin. It is located in a primarily residential area.

Extensive residential developments with associated village centres now cover most of the areas surrounding SDZ lands. Grangecastle Business Park, accessible via Grangecastle road is one of the larger employers.

There are several public parks in the area, including Griffeen Valley park and other smaller parks nestled amongst the residential areas. Griffeen Valley park is comprised of over 200 acres and is made up of a few large areas and a number of smaller green spaces. The park includes a dog park, playground, teen space and a skate park.

The R136 dual carriageway is a major transport artery which runs through Clonburris / Kishoge in a north – south direction. It runs from the N4 at Lucan to the N81 at Tallaght.

Summary

The LVIA Report concludes that the development would be in accordance with the various landscape and visual objectives, policies and land use zonings as set out in the South Dublin 2022- 2028 County Development Plan and the Clonburris SDZ Planning Scheme 2019. The visual impact of the proposed development upon completion and when considered within the context of the cumulative surrounding developments will have a positive, moderate long-term visual impact.

2.16 Material Assets (Transportation) (Chapter 13)

2.16.1 Introduction

This chapter of the EIAR assesses the likely effects of the proposed development in terms of vehicular, pedestrian and cycle access during the construction and operational phases, plus any likely and significant impacts associated with traffic due to the proposed development. Mitigation measures are proposed where negative effects are identified.

2.16.2 Methodology

The purpose of this assessment is to quantify the existing transport environment and to detail the results of assessment work undertaken to identify the potential level of transport impact generated as a result of the proposed development. The scope of the assessment covers transport and sustainability issues including pedestrian, cyclist, and public transport connectivity. Recommendations contained within this chapter are based on existing and proposed road layout plans, site visits, traffic observations and historic junction vehicle turning count data.

2.16.3 Baseline Environment

Site Location

The subject development sites are located in the Clonburris Strategic Development Zone (SDZ) lands. The subject sites are situated in the north westerly and westerly area of the SDZ.

Site 3 is situated west of the R136 Grange Castle Road (also referred to as the Outer Ring Road) and north of the Kildare/Cork Railway line.

Site 4 is situated south of the Kildare/Cork Railway line and west of the R136 Grange Castle Road (also referred to as the Outer Ring Road).

Site 5 is situated north of the Kildare/Cork Railway line, East of the R136 Grange Castle Road and is bisected by the Thomas Omer Way Road.

The SDZ is located to the west of Dublin City Centre and the M50. It is positioned between Lucan to the northwest, Clondalkin to the southeast, and Liffey Valley to the northeast.

Land Use

The subject sites are greenfield sites located within the Clonburris Strategic Development Zone (SDZ) lands. The Clonburris SDZ. The Clonburris SDZ lands have an approximate area of 280 hectares and are predominately agricultural in nature or greenfield sites. The overall SDZ lands contain two community colleges, a number of private residences including traveller accommodation, and two operational train stations (Clondalkin-Fonthill station and Kishoge station).

Existing Road Network

Clonburris is located to the west of Dublin City Centre and is well connected to the National Road Network, served by several key strategic routes. The Clonburris SDZ boundary is broadly bounded by the Arterial corridors of Adamstown Avenue and Thomas Omer Way to the north, Ninth Lock Road to the east, the Arterial corridor of Newcastle Road to the west, and the Grand Canal to the south.

Existing Cycling Facilities

At present, the Clonburris SDZ lands have a limited cycle network within the lands. However, the Grand Canal Greenway, which links Adamstown to the City Centre, passes through the area along the Grand Canal.

Fonthill and Grange Castle Roads include offer links to Lucan Village, Liffey Valley and the N4, which feature segregated cycle facilities and a cycle link to the City Centre. To the South, there are cycle links to the Grange Castle Business Park and further south, Clondalkin Village and Tallaght.

Thomas Omer Way has segregated cycle tracks on both sides of the road. The R120 Adamstown Road features shared pedestrian and cyclist facilities on both sides.

Existing Pedestrian Facilities

The Ninth Lock Road includes footpaths on either side along most of its length. The Fonthill Road features footpaths on either side, and The Grange Castle Road also features footpaths on either side. The Grand Canal Greenway offers walking facilities towards Dublin City Centre and Adamstown to the west.

A new canal bridge has just been completed by SDCC which features a shared space on the southern side and a pedestrian space on the southern side.

Existing Bus Network

There are a number of roads in the immediate area that have bus priority in the form of Quality Bus Corridors (QBC's).

Existing Rail Network

The proposed developments are situated on the Kildare railway line. The recently opened Kishoge Railway Station is located to the south of the subject site. Along Fonthill Road North, approximately 1,500m east of the subject site lies the Clondalkin-Fonthill station (Figure 14 12). These stations are served by commuter services to Heuston Station as well as Drumcondra, Dublin Connolly, Tara Street, Dublin Pearse and Grand Canal Dock, via the Phoenix Park Tunnel. Intercity trains do not serve these stations.

Eastbound services calling at Kishoge offer good connections to Heuston station, which is the busiest station on the intercity train network offering strong connections to the regional cities and towns.

Proposed Road Improvements

Road infrastructure upgrades as outlined within the Clonburris SDZ Planning Scheme (May 2019) and the South Dublin County Council Development Plan (2022 – 2028) that are proposed within/close to the Clonburris SDZ scheme include the following:

- Clonburris/Kishoge Street Network
- Celbridge Link Road

- Newcastle Road (R120)
- Griffeen Avenue
- New Nangor Road Extension
- Junction upgrade at Fonthill Road/N4
- Cloverhill Road/Ninth Lock Road Upgrade and Link Road:
- Western Dublin Orbital Route

The upgrades at Ninth Lock Road and Griffeen Avenue will be in line with the Clonburris SDZ Scheme. These existing roads will be designated as "Link Streets" under this scheme and shall be upgraded as traffic calmed streets. The scheme also proposes a number of key junction improvements through and along the proposed "Arterial Streets" within the subject lands to improve the connectivity. These improvements are proposed on Fonthill Road and Grange Castle Road. Furthermore, the proposed Western Dublin Orbital Route would provide additional connections towards Rathcoole, Saggart and Tallaght.

Clonburris Southern Link Street

The new Clonburris Southern Link Street (CSLS) will connect from the R120 Newcastle Road to the Ninth Lock Road with proposed intersections with the R136 Grange Castle Road and the R113 Font Hill Road. The proposed street will provide access for vehicular traffic, pedestrians, cyclists, and public transport to the Clonburris SDZ lands to the South of the Kildare/Cork Railway Line and provide linkages to the surrounding arterial road network.

The CSLS will provide a number of vehicular access spurs to facilitate future development of adjoining lands. The CSLS Scheme is currently under construction.

Clonburris Northern Link Street

Stage 2 of the Clonburris Infrastructure Development consists of the Clonburris Northern Link Street (CNLS) and associated trunk infrastructure to serve the Clonburris SDZ lands to the North of the Kildare/Cork Railway Line. Stage 2 will include approximately 2.3km of a new link street, 800m of side streets with cycle facilities, pedestrian crossings, traffic signals, footpaths, bus stops, car parking, public lighting and miscellaneous ancillary works. Stage 2 will also include the provision / upgrade of a number of signalised junctions along with the provision of minor priority-controlled junctions, upgrades on existing streets, provision of main public parks, drainage infrastructure, trunk watermain infrastructure and ancillary site development and landscape works.

Clonburris SDZ Planning Scheme

The design approach for pedestrian and cyclist infrastructure will be to apply uniform design widths along the streets that are under consideration and will consider the existing greenway network and pedestrian priority routes to interact with the proposed "Arterial" and "Link" corridors under the Clonburris SDZ planning scheme.

Local pedestrian priority streets/routes shall also be provided in designated areas in and around the vicinity of the proposed Kishoge and Clonburris Urban Centres. These local routes within the SDZ lands will create an opportunity to link with the Grand Canal Greenway.

Beyond the application site, a number of bridges are planned to enable north-south movement across the Grand Canal and Kildare Railway for different modes. In addition, the upgrade of an existing pedestrian and cycle bridge to a "green bridge" is planned at Hayden's Lane.

In order to mitigate the disintegration of the green infrastructure, in particular the Griffeen Valley Park and the Griffeen River, a green bridge is to be provided over the railway line, beyond the application site.

2.16.4 Potential Impacts of the Proposed Project

Construction Phase

The impact of the construction period will be temporary in nature. A significant benefit of the subject development site's characteristics is that all construction traffic vehicle parking demands can be accommodated on-site, thereby minimising the impact upon the operational performance and safety levels of the adjacent public road network. Considering the site's proximity to the strategic road network and following the implementation of an appropriately detailed CTMP, it is concluded that construction traffic will not give rise to any significant traffic concerns or impede the operational performance of the local road network and its surrounding junctions. The scheme shall be constructed in a manner to minimise disruption to road users, local residents and businesses.

Operational Phase

The likely effect of the Proposed Development at operational stage will be additional traffic which may have a slight long-term adverse effect on the adjoining road network.



For the key local junctions, the proposed development upon full completion would have a material effect (the level of traffic it generates surpasses 10% and 5% on normal and congested networks respectively) on the following junctions in the adopted Do-Something scenario:

- Junction 3 Thomas Omer Way / Adamstown Avenue / R136 Grange Castle Road
- Junction 4 R136 Grange Castle Road / CNLS
- Junction 5 R136 Grange Castle Road / CSLS

The assessments for Junctions 3, 4 and 5 show an oversaturated performance during the morning and evening peak hours. However, the network is over capacity regardless of the Proposed Development.

Therefore, the impact of the development in Junctions 3, 4 and 5 is deemed 'not severe'.

It is not anticipated that the proposed development will negatively impact the surrounding pedestrian, cycling and public transport facilities and services.

RESIDUAL IMPACTS (POST-MITIGATION)

Construction Phase

The implementation of mitigation measures during the construction and operational phases will ensure that the proposed development will not give rise to any likely significant long-term traffic impacts.

Operational Phase

The impact of the development in Junction 3 is an is an increase of 10% in capacity in the evening, and 9% in capacity in the morning. There are no other significant residual impacts on traffic.

The impact of the development in Junction 4 is an is an increase of 6% in capacity in the evening, and 11% in capacity in the morning. There are no other significant residual impacts on traffic.

The impact of the development in Junction 5 is an is an increase of 15% in capacity in the evening, and 21% in capacity in the morning. There are no other significant residual impacts on traffic.

2.17 Material Assets (Waste) (Chapter 14)

2.17.1 Introduction

AWN Consulting undertook the waste management assessment. The receiving environment is largely defined by South Dublin County Council (SDCC) as the local authority responsible for setting and administering waste management activities in the area through regional and development zone specific policies and regulations.

There will be waste materials generated from site clearance works, excavations, construction of the new development and from the operation of the new development. There is currently no waste generated at the proposed development sites (KSG3, KSG4, and KSG5).

2.17.2 Potential Impacts and Mitigation Measures of the Proposed Development

Construction Phase

During the construction phase the mismanagement of waste, including the inadequate storage of waste, inadequate handling of hazardous waste, the use of inappropriate or insufficient segregation techniques, and the use of non-permitted waste contractors, would likely lead to negative impacts such as waste unnecessarily being diverted to landfill, litter pollution which may lead to vermin, runoff pollution from waste, fly tipping and illegal dumping of waste. In the absence of mitigation, the effect on the local and regional environment is likely to be long-term, significant and negative.

Operational Phase

The potential impacts on the environment during the operational phase of the proposed development would be caused by improper, or lack of waste management. In the absence of mitigation, the effect on the local and regional environment is likely to be long-term, significant and negative.

2.17.3 Residual Effect of the Proposed Development

Construction Phase

During the demolition and construction phase, typical construction waste materials will be generated which will be source segregated on-site into appropriate skips/containers, within designated waste storage areas and removed from site by suitably permitted waste contractors as required, to authorised waste facilities, by appropriately licensed waste contractors. The accurate keeping of waste records will be undertaken. All waste leaving the site will be recorded and copies of relevant documentation maintained.

This will all be overseen by the main contractor, who will appoint a construction phase Resource Manager to ensure effective management of waste during the excavation and construction works. All construction staff will be provided with training regarding the waste management procedures on site.

A carefully planned approach to waste management and adherence to the site-specific Resource and Waste Management Plan (Appendix 15.1) and Chapter 15 during the construction phase will ensure that the effect on the environment will be *short-term, neutral* and *imperceptible*.

Operational Phase

During the operational phase, waste will be generated by the residents and commercial tenants. Dedicated individual waste storage areas (WSAs) have been allocated throughout the proposed development sites for the use of residents of duplexes, triplexes, and houses in all proposed development sites. There are dedicated shared WSAs allocated for the residents of the apartment blocks in all proposed development sites. There are dedicated WSAs allocated for the commercial units across the proposed development sites.

These WSAs have been appropriately sized to accommodate the estimated waste arisings from the residential and commercial aspects of the proposed development. The WSAs have been allocated to ensure a convenient and efficient management strategy with source segregation a priority. Waste will be collected from the curb by permitted waste contractors and removed off-site for re-use, recycling, recovery and/or disposal.

An Operational Waste Management Plan has been prepared and included as part of this submission as Appendix 15.2, This OWMP provides a strategy for segregation (at source), storage and collection of wastes generated within the development during the operational phase including dry mixed recyclables, organic waste, glass, mixed non-recyclables, garden/green waste, batteries, waste electrical equipment, printer cartridges, chemicals, lightbulbs, textiles, cooking oil, furniture and abandoned bicycles.

Provided the mitigation measures outlined in chapter 15 are implemented and a high rate of reuse, recycling and recovery is achieved, the predicted effect of the operational phase on the environment will be *long-term, neutral* and *imperceptible.*

2.17.4 Cumulative Impact of the Proposed Development

Construction Phase

There are existing residential and commercial developments close by, along with the multiple permissions remaining in place in the area. In a worst-case scenario, multiple developments in the area could be developed concurrently or overlap in the construction phase. Due to the high number of waste contractors in the SDCC region, as provided from the National Waste Collection Permit Office and the EPA, there would be sufficient contractors available to handle waste generated from a large number of these sites simultaneously, if required. Similar waste materials would be generated by all of the developments.

Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will mitigate against any potential cumulative effects associated with waste generation and waste management. As such the cumulative effect will be *short-term, imperceptible* and *neutral*.

Operational Phase

There are existing residential and commercial developments close by, along with the multiple permissions remaining in place. All of the current and potential developments will generate similar waste types during their operational phases. Authorised waste contractors will be required to collect waste materials segregated, at a minimum, into recyclables, organic waste and non-recyclables. An increased density of development in the area is likely improve the efficiencies of waste collections in the area.

Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will mitigate any potential cumulative impacts associated with waste generation and waste management. As such the cumulative effect will be a *long-term, imperceptible* and *neutral.*

2.18 Material Assets (Utilites) (Chapter 15)

2.18.1 INTRODUCTION

The Material Assets-Utilities chapter looks at the impact of the provision of utility services for the proposed residential development across Sites 3, 4, and 5, located within the Clonburris area.

Utility Impact Assessment:

The assessment looks at potential impacts on existing utility networks like gas, electricity, and telecommunications, ensuring that there will be no disruptions during both construction and

operation. Any necessary diversions or new connections will be carefully planned in consultation with utility providers to minimize inconvenience.

Gas Infrastructure:

- Site 3: An underground gas transmission pipe runs along the eastern boundary of Site 3. This pipeline will be maintained as is, with any necessary work carried out in consultation with Gas Networks Ireland to ensure safety.
- Site 4: Some modifications to existing gas pipelines will be required for construction.
- Site 5: No gas infrastructure is present in Site 5. The area will not require any gas connections as heating and hot water will be provided via electrical heat pumps.

Electricity Infrastructure (ESB):

- Site 3: There are overhead 220kV national transmission lines passing through Site 3. ESB plans to divert these lines to remove them from the site. Additionally, the Balgaddy 38kV substation will remain on-site, and the existing ESB cabling will be rerouted as necessary to accommodate the new development. Several new substations and distribution points will be created to support the development.
- Site 4: The site will be connected to existing ESB infrastructure, with provisions for new substations to supply power to the development.
- Site 5: Two existing substations at Lynch Lane will support the power needs of Site 5. Additional mini-pillars will be used throughout the site to distribute power to individual residences.

Telecommunications:

- Site 3: There is no existing Virgin Media network on Site 3, but a new connection to EIR will be made along Adamstown Avenue. Both EIR and Virgin Media services will be extended into the residential development for broadband and television services.
- Site 4: A similar approach will be taken for Site 4, with new telecommunications connections provided via EIR and Virgin Media networks.
- Site 5: Telecommunications connections for Site 5 will be made through existing infrastructure at Lynch Lane, extending EIR and Virgin Media services into the development.

Development Plans:

- Gas Services: No gas services will be provided to any of the sites. Instead, electrically powered heat pumps will be used for space heating and hot water across all sites.
- Electricity Services: Each site will be connected to a network of new and rerouted ESB substations and mini-pillars, ensuring that the power needs of the residential units are met. Each substation will be located for easy access, in line with ESB's safety standards.
- Telecommunications: Each site will be equipped with a new telecommunications network, allowing residents to access TV and fibre broadband services through ducts that terminate in each home and apartment block.

Overall, developments will have no negative impact on existing utility networks. All new infrastructure and modifications will be carried out in close coordination with utility providers to ensure a smooth and safe integration of services into the proposed residential community.

2.19 Cultural Heritage (Archeological & Architectural) (Chapter 16)

An archaeological and cultural heritage assessment has been undertaken in advance of three proposed residential developments (known as Sites 3, 4, 5) at Grange, Esker South, Kishoge and Balgaddy, in Clonburris, Co. Dublin. The assessment aims to ascertain any potential likely and significant impacts that the proposed developments may have on the existing cultural heritage resource. This assessment was undertaken by Faith Bailey and John Gallacher of IAC Archaeology

(IAC). The assessment has been informed by a programme of archaeological test trenching (Appendix 18.1, Brännström 2024).

The assessment at Site 3 has shown that there are no recorded monuments or built heritage sites located within the study area. The site itself is characterised by scrub and overgrown, along with previous ground disturbances. It is crossed by a modern road and a number of large metal pylons. The assessment has shown that no previously unrecorded sites or structures of significance are located within the site, with the exception of a poorly preserved section of overgrown townland boundary (95m) in the southwest section. A review of the Excavations Bulletin (1970-2025) has shown that little of significance has been identified within the study area. Archaeological testing was carried out in the accessible portions of the development site during 2024, but nothing of archaeological significance was identified. Overall, Site 3 possesses low archaeological and cultural heritage potential.

The assessment at Site 4 has shown that there are no recorded monuments or built heritage sites located within the study area. Grange House is located in the southern part of the site and whilst it is not listed in the RPS or NIAH, it is noted as being a structure of importance in the Clonburris SDZ. The site itself is characterised by a large mature nursery, containing mature trees and shrubs. Modern development is present in the southeast and southwest corner of the site, including the SDCC Parks Compound and some modern derelict development. The permitted Clonburris infrastructure scheme is also under construction through the centre of the site. The historic mapping shows the position of Grange House and a small demesne throughout the post medieval period. Today the demesne is no longer present, due to the compound and the nursery. A review of the Excavations Bulletin (1970-2025) has shown that archaeological testing was carried out in the southwest portion of the site, and the remains of a post medieval brick kiln were identified. This area is now occupied by the new road infrastructure, and no reports were identified indicating that the brick kiln was excavated prior to construction. A site inspection has been carried out, which confirmed the results of the baseline analysis. Site 4 is covered, for the most part, by trees and shrubs with the compound and modern development in the southern part of the site along with Grange House. The site was not subject to archaeological testing due to the presence of mature planting. Overall, the site possesses a low to moderate archaeological potential.

The assessment at Site 5 has shown that there are no recorded monuments or built heritage sites located within the study area. The historic mapping shows that structures formerly occupied part of Site 5, but these are no longer extant. A review of the Excavations Bulletin (1970-2025) has shown that archaeological testing was carried out within the study area but no definitive archaeological remains have been recorded in proximity to the site. The aerial photographic coverage shows that much of Site 5 has been subject to extensive ground disturbances, especially in the southern and central portions of the site. Coverage from 2009 shows material had been imported into the northern section of the development area. A site inspection has been carried out, which confirmed the results of the baseline analysis. One archaeological test trench was excavated in the northern part of Site 5 and this confirmed the importation of modern construction debris, which was found to be present to a depth of 1.2m. Overall, the archaeological potential of Site 5 as a whole is determined to be negligible to low.

Site 3

No recorded or previously unrecorded sites of archaeological potential have been identified within the proposed development area. The site has been subject to a large degree of disturbance, but it is possible that small or isolated archaeological features survive beneath the current ground level with no surface expression. Ground disturbances associated with the proposed development have the potential to result in a direct, negative and permanent impact on any such remains that may survive beneath the current ground level. Effects may be moderate to very significant, dependent on the nature, extent and significance of any archaeological remains that are present.

Ground disturbances associated with the development will results in a direct, negative and permanent impact on the section of townland boundary located in the southwest corner of Site 3. The effect will be slight negative in terms of significance.

The operation of the proposed development will not result in any impacts on the archaeological or cultural heritage resource.

All stripping of remaining topsoil within Site 3, which is associated with the proposed development, will be subject to archaeological monitoring. This will be carried out by a suitably qualified archaeologist and if any archaeological remains are identified, further mitigation may be required, such as preservation by record or in-situ. Any further mitigation will require agreement from the National Monuments Service of the DoHLGH.

A written and photographic record of the section of townland boundary in the southwest portion of the development area will be compiled and the removal of the boundary will be subject to archaeological monitoring, as described above.

Site 4

No recorded or previously unrecorded sites of archaeological potential have been identified within the proposed development area. The site has been subject to a degree of disturbance, but it is possible that small or isolated archaeological features survive beneath the current ground level with no surface expression. Ground disturbances associated with the proposed development have the potential to result in a direct, negative and permanent impact on any such remains that may survive beneath the current ground level. Effects may be moderate to very significant, dependent on the nature, extent and significance of any archaeological remains that are present.

Ground disturbances associated with the development will result in a direct, negative and permanent impact on the section of former townland boundary located in the northern part of Site 4. The effect will be slight negative in terms of significance.

The construction of the new road along the southern boundary of the development area will result in the removal of the recessed entrance associated with Grange House. The entrance was established during the early 20th century and is not contemporary with Grange House. This is a direct, negative and permanent impact, which is a slight negative effect.

The demesne landscape originally associated with Grange House has been replaced by an existing compound and only remnant mature planting survives around the boundary of the original landscape. The development will retain planting along the western boundary and green space will be established to the west and south of Grange House. An access road will be constructed in the eastern portion of the original landscape. This is a direct, negative and permanent impact, which is a not significant negative effect.

All stripping of remaining topsoil within Site 4, which is associated with the proposed development, will be subject to archaeological monitoring. This will be carried out by a suitably qualified archaeologist and if any archaeological remains are identified, further mitigation may be required, such as preservation by record or in-situ. Any further mitigation will require agreement from the National Monuments Service of the DoHLGH.

A written and photographic record of the section of the former townland boundary in the northern portion of the development area will be compiled and the removal of the boundary will be subject to archaeological monitoring, as described above.

A written and photographic record will be made of the recessed entrance to Grange House, which dates to the early 20th century, prior to its removal as part of the development.

The operation of the proposed development will see three-storey structures constructed to the north of Grange Houe, which will have a ridge height of 11.67m. In addition, a road will operate to the east of the house, whilst green space will be located to the south and west of the structure. The operational stage of the development will result in an indirect, negative and permanent impact on Grange House, which is a moderate negative effect.

A written and photographic record will be made of the current landscape context of Grange House, prior to the commencement of development. It is not possible to fully mitigate the indirect impacts on the house during operation, due to the proximity of the required infrastructure and surrounding residential development.

Site 5

No recorded or previously unrecorded sites of archaeological potential have been identified within the proposed development area. The site has been subject to a very large degree of disturbance, but it is

possible that small or isolated archaeological features survive beneath the current ground level with no surface expression (northern portion of the site only). Ground disturbances associated with the proposed development have the potential to result in a direct, negative and permanent impact on any such remains that may survive beneath the current ground level. Effects may be moderate to very significant, dependent on the nature, extent and significance of any archaeological remains that are present.

Ground disturbances associated with the development will results in a direct, negative and permanent impact on any below ground remains of the section of townland boundary located in the northern part of Site 5. The effect will be slight negative in terms of significance

The operation of the proposed development will not result in any impacts on the archaeological or cultural heritage resource.

All stripping of remaining topsoil within the northern portion of Site 5, which is associated with the proposed development, will be subject to archaeological monitoring. This will include the site of the townland boundary that previously crossed the site. Monitoring is not required in the central or southern portions of this site due to the level of ground disturbances that have occurred. Monitoring will be carried out by a suitably qualified archaeologist and if any archaeological remains are identified, further mitigation may be required, such as preservation by record or in-situ. Any further mitigation will require agreement from the National Monuments Service of the DoHLGH.

A written and photographic record of the section of the former townland boundary in the northern portion of the development area will be compiled and the removal of the boundary will be subject to archaeological monitoring, as described above.

Following the completion of mitigation measures at Site 3, 4 and 5, there will be no significant residual impacts upon the archaeological and cultural heritage resource.

2.20 Risk Management (Major Accidents & Disasters) (Chapter 17)

This assessment describes the proposed development in respect of its potential vulnerability to major accidents/ disasters. It also considers the potential for the development to give rise to major accidents/ disasters.

The scope and methodology of this assessment is based on the understanding that the proposed development will be designed, built and operated in line with best international current practice. As such, major accidents resulting from the proposed development would be very unlikely.

A risk analysis-based methodology that covers the identification, likelihood and consequence of major accidents and / or disasters has been used for this assessment. There are no Seveso sites in the vicinity of the site.

No potential scenarios during the construction phase were identified as requiring further assessment.

2.21 Summary of Mitigation Measures (Chapter 18)

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

2.22 Summary of Residual Impacts (Chapter 19)

This Chapter provides a summary of all the residual impacts identified throughout the EIAR document for ease of reference for the consent authority and all other interested parties.

2.23 Summary of Cumulative Impacts & Interactions (Chapter 20)

This Chapter identifies the principal interactions between the potential impacts of the environmental factors identified in Chapters 5-16 inclusive, and as well as cumulative impacts arising, based on best scientific knowledge.

All potential interactions have been addressed as required throughout the EIAR. During each stage of the assessment contributors have liaised with each other (where relevant) to ensure that all such potential interactions have been addressed.