BLESSINGTON DEMESNE LRD

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

VOLUME I – NON-TECHNICAL SUMMARY

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1. INTRODUCTION

1.1 Introduction

This document provides a non-technical summary (NTS) of the Environmental Impact Assessment Report (EIAR) submitted with a Large-scale residential development at a site of 25.14 ha on lands within the townlands of Blessington Demesne, Newpaddocks and Santryhill, Blessington, Co. Wicklow.

The proposed development in summary consists of 329 residential units (270 no. houses, 47 no. apartments and 12. Duplex units), 10.65 ha town park and the extension of the Blessington Inner Relief Road from the existing roundabout at Blessington Demesne to the N81, north of the Woodleigh residential estate. An Environmental Impact Assessment Report and a Natura Impact Statement have been prepared in respect of the proposed development.

This NTS reflects the findings of the main chapters in the EIAR document that accompanies the planning application submitted to Wicklow County Council. Environmental specialist consultants were responsible for the preparation of individual chapters of the EIAR. Each EIAR chapter outlines the receiving environment; the potential impacts of the proposed development; the mitigation measures deemed necessary; and the predicted impacts once the mitigation measures are implemented. The purpose of the NTS is to summarise in non-technical language, in so far as possible, the likely and significant effects to the environments arising from this project.

1.2 Role of EIA

A planning application is being made to Wicklow County Council for a Large Scale Residential Development (LRD). Environmental Impact Assessment (EIA) requirements originate from European legislation which has been transposed into Irish legislation. Certain applications for development (projects) require a mandatory EIAR to be carried out as the development meets or exceeds a stated threshold in Part 1 and Part 2 of Schedule 5 of the Planning and Development Regulations 2001, as amended.

The overall LRD application site is c.25.14 ha and includes 329 residential units. Having regard to the overall size of the site and to category 10(b)(iv) of Part 2 of Schedule 5 of the Planning and Development Regulations 2001, as amended, mandatory EIAR is required.

1.3 Format of EIAR

The format of this report follows the broad structure of the EIAR Volume I and addresses the topics in the following order.

- Chapter 1: Introduction;
- Chapter 2: Description of Development
- Chapter 3: Alternatives Considered;
- Chapter 4: Population and Human Health;
- Chapter 5: Biodiversity

- Chapter 6: Land, Soil and Geology
- Chapter 7: Water;
- Chapter 8: Air and Climate;
- Chapter 9: Noise and Vibration
- Chapter 10: Landscape and Visual Impact
- Chapter 11: Cultural Heritage and Archaeology
- Chapter 12: Transportation and Traffic
- Chapter 13: Material Assets – Waste;
- Chapter 14: Material Assets Utilities
- Chapter 15: Material Assets: Major Accidents and Disaster
- Chapter 16: Summary of Mitigation Measures
- Chapter 17: Summary of Cumulative Impacts

A systematic structure is used for the main body of the report and the chapters are generally structured under the following headings.

- Introduction
- Assessment Methodology
- Characteristics of the Proposed Development
- Baseline Description
- Impact Assessment
- Cumulative Impacts
- Ameliorative, Remedial or Reductive Measures
- Residual Impacts (including worst case scenario)
- Do Nothing Scenario
- Monitoring
- Difficulties Encountered

1.4 Format of non-technical summary report

In this non-technical summary (NTS) report, the aim is to provide a concise and comprehensive summary, easily understood by a lay member of the public not having a background in environmental matters or an in-depth knowledge of the proposed project. The information is summarised under the following broad headings for chapters 4-16.

- Introduction
- Methodology and receiving environment
- Impact assessment and mitigation

1.5 Description of proposed development

The applicants, Cairn Homes Properties Ltd., are proposing an application 329 residential units including:

- 270 two storey houses (28 no. 2-bed, 218 no. 3-bed, 24 no. 4 bed.) comprising of semi-detached and terraced units
- 47 no. apartments (22 no. 1 bed, 25 no. 2 bed) provided within 1 no. four-storey block.
- 12 no. duplex units within 1 no. three-storey blocks (6 no. 2 bed and 6 no. 3 bed units).

- Car and bicycle parking spaces to include:
  - 518 no. car parking spaces for the houses, 54 no. spaces for the apartments and 22 no. spaces for the duplex units.
  - 167 bicycle spaces for the duplex units and for the apartments.
- 10.65 ha Town Park;
- 1.041 ha public open space including pocket parks and playgrounds;
- 1,514 sqm of communal open space (1,290 sqm at Apartments, 224 sqm at Duplex units);
- Two new vehicular access off Oak Drive and one new vehicular access off the Blessington Inner Relief Road
- infrastructure works to serve the housing development to include the internal road network;
- ESB substations/switchrooms, lighting, site drainage works and all ancillary site services and development works above and below ground; and
- temporary permission is also sought for the erection of three marketing signs (4.55 m high and 13.73 sqm each) and a marketing suite.

The development will also include:

- The extension of the Blessington Inner Relief Road (approx. 700m long) from the existing 4-arm roundabout at Blessington Demesne Lands, running north west of Blessington Business Park, and north of the Woodleigh residential area to a new four-arm roundabout junction on the N81 Dublin Road. The new roundabout will consolidate existing junctions with Hollyvalley, Doran's Pit and the Roadstone quarry site.
- A new junction will be provided to the Roadstone Quarry Access Road north of the road's alignment.
- The scheme will comprise a two-lane single carriageway road with cycle lanes and footpaths, landscaping and drainage works (including attenuation ponds & Sustainable Urban Drainage Systems (SUDS)); road signage and all ancillary site services and development works above and below ground.

Design Strategy

The LRD Planning application is accompanied by a Design Statement prepared by MOLA Architects.

The site strategy is based around developing a new neighbourhood that links back to the proposed Town Park and Greenway on the site. The Town Park and the Greenway to Glen Ding Woods create a

continuous green route and strengthens the link between the new housing element to the surrounding areas and village. The Town Park will become a new positive focal point in the village as well as a new amenity to the development. The Town Park will incorporate the historical elements which exist on the site.

The existing trees and hedgerows help to retain a rural aspect around the boundary of the scheme. Corner dwellings and corner sites have been designed to provide active frontages. The perimeter of the residential element provides passive surveillance over the new local green spaces and streets.

The Town Park precedent images on this page demonstrate the type of distinctive landscape that will be created within the Town park on the site. The wetlands will give the opportunity to create a unique landscape using the existing landscape environment.

Distinct character areas are provided in the following locations, with variations in finishes and colour:

- Area 1- Houses along the road and main site
- Area 2- Houses along the stream
- Area 3- Apartment and Duplex blocks

Landscape Strategy

A Landscape Strategy Report accompanies the planning application prepared by Kevin Fitzpatrick Landscape Architecture. The landscape strategy aims to integrate the proposed residential development with the existing landscape and create a network of attractive and useable open spaces while contributing to local biodiversity. The public green areas are designed as landscape spaces that offer the opportunity for meeting, walking, interaction with nature and formal and informal play.

In accordance with the Blessington Local Area Plan zoning on site, a 10.65 ha Town Park has been proposed. This is additional to parts of the park already permitted on the landholding and will result in a c.15 ha town park under PA.Reg.Ref. 20/1146, as amended by PA.Reg.Ref.22/1191. The provision of the Town Park at Blessington Demesne will provide for an important town amenity, enhance connections, provide for biodiversity and promote active and passive recreation.

A linear park is proposed along the Deerpark waterbody, which will enhance the green and blue infrastructure at the subject site.

The ecological corridor defined by the existing stream will be incorporated into the landscape strategy. Where possible, existing levels along the stream will be retained to cause the least disturbance to local ecology and any footpaths are proposed outside of the 10m riparian buffer. The existing vegetation along the stream will be retained and enhanced with pocket planting of other native species including scrub and riparian grasses and perennials. A number of seating spaces have been located to overlook the existing stream and there is a proposed bridge crossing between the main site and the proposed duplexes. The stream will be made inaccessible through the use of dense native scrub and woodland, however some sections will be planted with lower growing plants to ensure some sensory connection

with the stream by users. The pedestrian route along the stream is defined by small areas of lawn and natural play routes through micro-woodlands and meadow.

Northern Arm of the Blessington Inner Link Street (formerly known as the Blessington Inner Relief Road)

The development will also include the extension of the Blessington Inner Link Street (BILS) (formerly known as the Blessington Inner Relief Road (BIRR)) (approx. 700m long) from the existing 4-arm roundabout at Blessington Demesne Lands, running north west of Blessington Business Park, and north of the Woodleigh residential area to a new four-arm roundabout junction on the N81 Dublin Road. The new roundabout will consolidate existing junctions with Hollyvalley, Doran's Pit and the Roadstone quarry site. A new junction will be provided to the Roadstone Quarry Access Road north of the road's alignment.

The scheme will comprise a two-lane single carriageway road with cycle lanes and footpaths, landscaping and drainage works (including attenuation ponds & Sustainable Urban Drainage Systems (SUDS)); road signage and all ancillary site services and development works above and below ground.

The provision of this portion of the road will the most significant contribution to date toward the achievement of long-term road objectives of Wicklow County Council. The construction of the BILS will allow for the deviation of through traffic away from the Main Street.

Phasing

The proposed development will be delivered with the 3 year timeframe of the permission. The road will be completed within six months of commencement and the rest of the development in 30 months. The park will be delivered within 1 year of commencement.

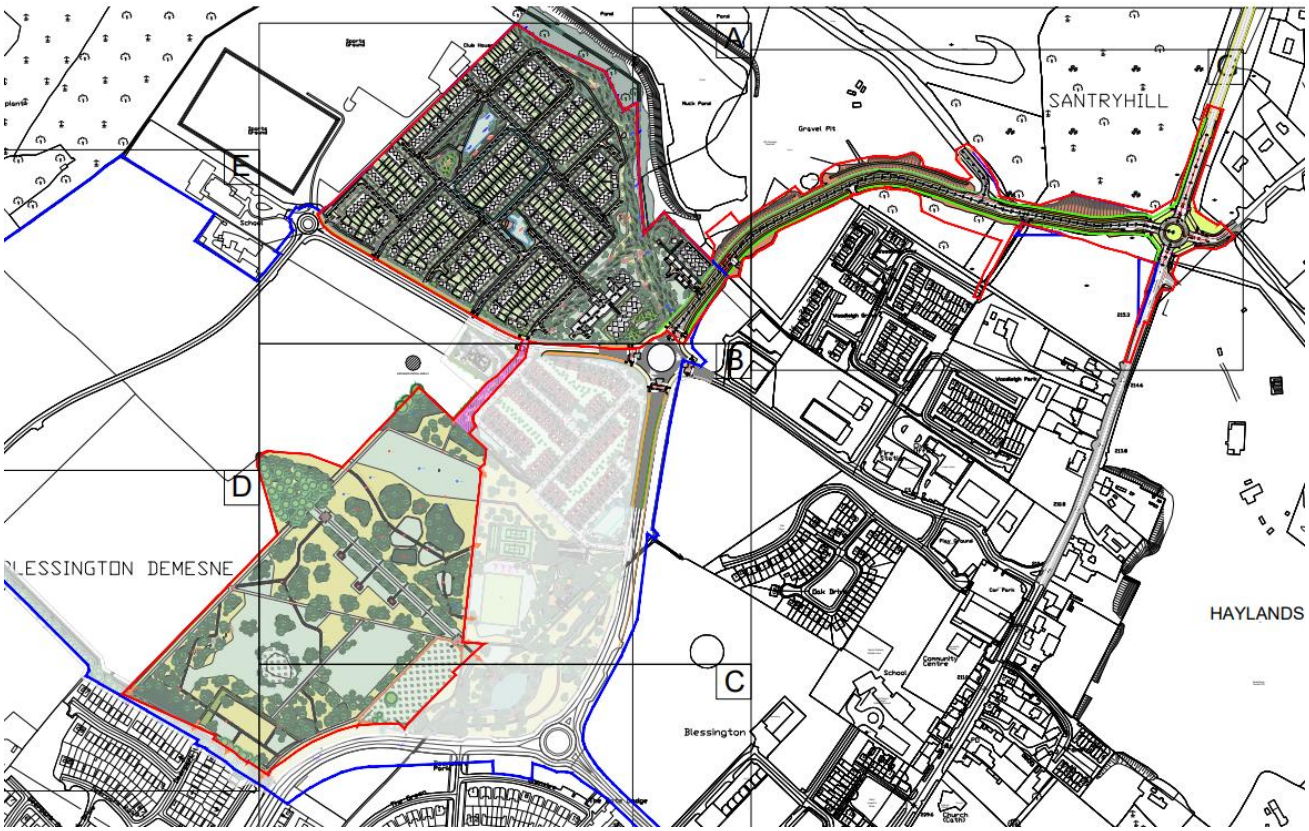

Figure 1: Proposed Development (Source: Mola)

1.6 Site location, description and surrounding area

The application site consists of a site of 25.14 ha on lands within the townlands of Blessington Demesne, Newpaddocks and Santryhill, Blessington, Co. Wicklow. School Link Road/Oak Drive is located to the south of the residential element of this application, and to the north of the park. The BIRR generally bounds the site to the east. The Deerpark stream bounds the residential site to the north and east. The Blessington no. National School is generally located north – northwest of the residential site. The residential site is immediately adjacent to the GAA ground. The Roadstone open cast quarry is located to the north of the site, the Deerpark stream acting as the natural boundary. An existing roundabout is located immediately southeast of the residential site and another to its west, adjacent to the school and GAA.

Figure 2: Aerial View of the Site Looking towards Deerpark (Source: Cairn Homes)

The stream bounds the north and east of the residential site. It intersects with the BIRR before discharging to the existing pond in the existing wetland area of the site. The pond and wetland area form part of the Cairn lands which are subject to extant permission PA.Reg.Ref.20/1146. The pond connects to the Deerpark waterbody that discharges to the Blessington Lakes to the south-east of Blessington. Much of the original demesne has been developed to the south and the Blessington Inner Relief Road also traverses the original holding.

Figure 3: Pond and Wetland on the landholding, looking east toward Blessington (Source: Cairn Homes)

The riparian corridor consists of a thick tree cover which shields the stream. The stream is open until it is culverted at its intersection with the BIRR. It then opens again as it enters Phase 1 of the Cairn landholding.

A bastion type woodland is included in the proposed town park, toward the west of the application site. It is of significant age and located on a raised section of ground. There are some trees of exceptional age, quality and size which are preserved in a historic demesne setting. Many of these are over 100 years old.

Figure 4: Aerial View of the Residential and Town Park Site looking south towards Deerpark (source: MOLA Architects)

1.7 Wicklow County Development Plan 2022-2028 and Blessington Local Area Plan 2013-2019

The Wicklow County Development Plan 2022-2028 applies. The application site is zoned through the Blessington Local Area Plan 2013-2019. Accordingly, the following zoning applies to the site:

- Residential
- Open Space
- Employment/ Proposed Employment

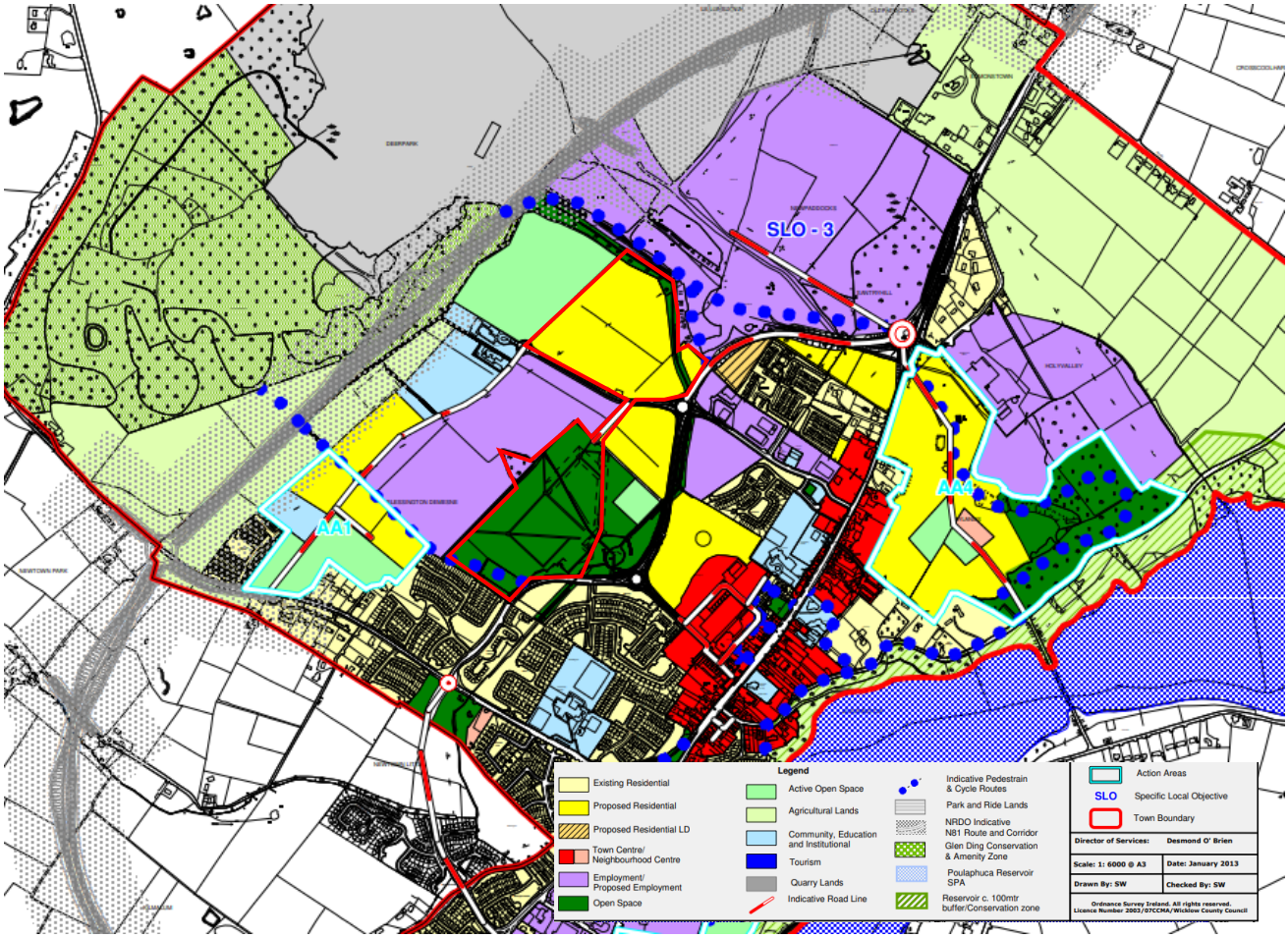

Figure 5: Blessington Local Area Plan 2013-2019 Zoning Map (Source: Wicklow County Council)

2. ALTERNATIVES CONSIDERED AND COMPARISON OF ENVIRONMENTAL EFFECTS

2.1 Introduction

An EIAR requires information to be provided of a "a description of the reasonable alternatives" for example in terms of project design, technology, location, size and scale, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects. This section presents the main reasons for selecting the chosen alternative.

2.2 Alternatives Considered

A number of reasonable alternative layouts were assessed the subject lands. Each alternative was assessed and compared by the EIAR consultants. The proposed final chosen layout and detailed design have been directly informed by feasibility and environmental considerations, consultations with Wicklow County Council, the Opinion of Wicklow County Council and the feedback of the EIAR team.

2.2.1 Alternative Uses

The use or development of the subject lands is subject to a range of regulatory controls that influence inter alia future potential function, design and access to the area. The statutory planning framework for this area is the Wicklow County Development Plan 2022-2028. The zoning map for the town was adopted under the Blessington Local Area Plan 2013 – 2019 and considers a number of 'permissible in principle' uses that could be developed on the subject lands. The proposed residential development includes active open spaces and recreational areas.

Having considered the identified need for housing in the Development Plan, the site's zoning, the patterns of development in the surrounding area of the application site, it is considered that the proposed development puts forward an appropriate balance of development and amenity uses for the site.

2.2.2 Alternative Processes

Given the zoning objectives for the site, the rationale for the project and the nature of the proposed development including residential and open space, no reasonable alternative processes were considered appropriate.

2.2.3 Alternative Mitigation Measures

Measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment are described in the EIAR Report. These measures are commonly referred to as 'Mitigation Measures', with the exception of the last action, offsetting, which can be considered to be a Compensation Measure.

The EIAR outlines mitigation measures under the topics assessed. These are considered to be appropriate to the location, nature and extent of the proposed development and to its potential impacts. Therefore, no alternative mitigation measures have been considered.

2.2.4 Do-nothing Approach

A 'do-nothing' scenario where the site remains undeveloped was considered as **Alternative 1.** Wicklow County Council zoned the lands for residential development and open space and there is an established Road Reservation for the Blessington Inner Relief Road (northern arm). It is therefore an important consideration that the uses proposed are aligned with those considered by the Blessington LAP and its SEA.

Blessington is designated as a Self Sustaining Growth Town in the County Development Plan. The do-nothing scenario is therefore considered to be an inappropriate, unsustainable and constitutes an inefficient use of residentially zoned lands.

The future use of the lands as open space and the proposals to develop a parkland would not likely occur should the do-nothing alternative be selected.

2.2.5 Alternative layouts considered and iteration of design

Alternative no. 2: Masterplan 2000

This alternative presents the masterplan layout for the subject site that was presented in a planning application lodged with Wicklow County Council in 2000 under Ref. 00/3687. Permission was granted by An Bord Pleanála for a housing development (598 houses), retail, educational & leisure facilities and to construct a portion of Blessington Inner Relief Road on the 13th March 2002.

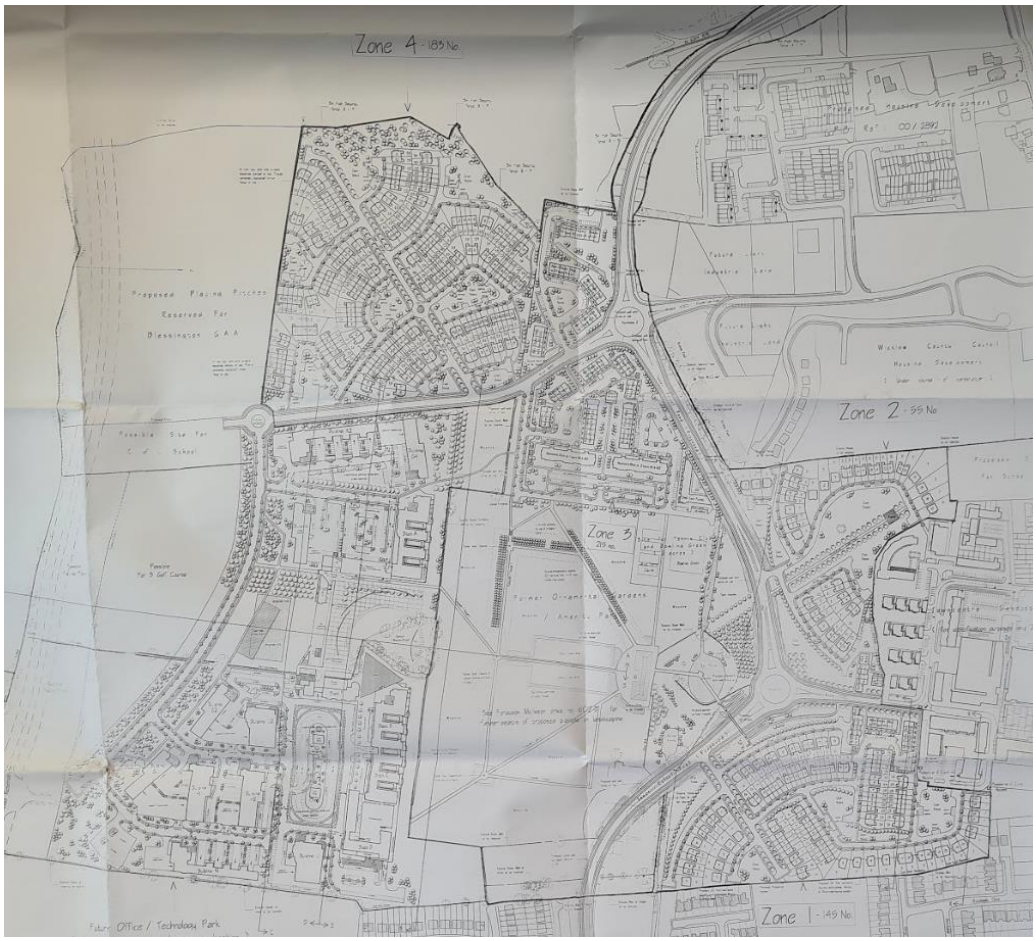

Figure 6: Alternative 2: Landscape Masterplan 2000 (Further Information 20/8/2001)

It is notable that the land use distribution under the 2002 Planning Permission was carried forward to the zoning map adopted with the Blessington Local Area Plan. The applicable development management standards are those contained in Appendix 1 of the Wicklow County Development Plan 2022-2028. The land use zoning layout brought forward in the LAP was analogous with the 'Scenario 2 – Moderate Development Envelope' Alternative, assessed in the SEA of the Blessington Local Area Plan.

The densities considered under the masterplan layout were relatively low and do not put forward the best use of land, a finite resource. Overall, this is considered this alternative is positive in the long term, in that while it does support population growth and community facilities, it does not provide for a sustainable level of density.

Alternative no. 3: Layout submitted as part of the pre-application process to Wicklow County Council

In 2020 Cairn Homes Properties Ltd. sought to progress plans for the Blessington Demesne area for their overall landholding of c 64 ha. (see lands enclosed with blue line below). A masterplan was developed by the applicant's design team, which progressed the layout from the 2000 Masterplan. The subject site was generally referred to as Phase 2. The layout of the design for the subject site evolved from August 2021 to February 2023.

Figure 7 Alternative 3 – Pre-application layout

Alternative no. 4: The proposed development with BIRR

This alternative is in effect the development proposal as described in Chapter 2 of the EIAR. The evolution of the preferred alternative was informed by consultations with WCC, further detailed analysis of the characteristics of subject site by the EIAR team and interaction with the design team having regard to the potential environmental impacts of the project.

Figure 8 illustrates the layout design response prepared by the design team led by MOLA Architects from August 2023. Most notable in the final scheme is the introduction of the BIRR road scheme. In response to environmental baseline analysis of the evolving design, it was found that the delivery of this road infrastructure was most beneficial for Blessington Town centre as well as the residential scheme itself. The scheme provides for a higher density of development in a revised layout plan.

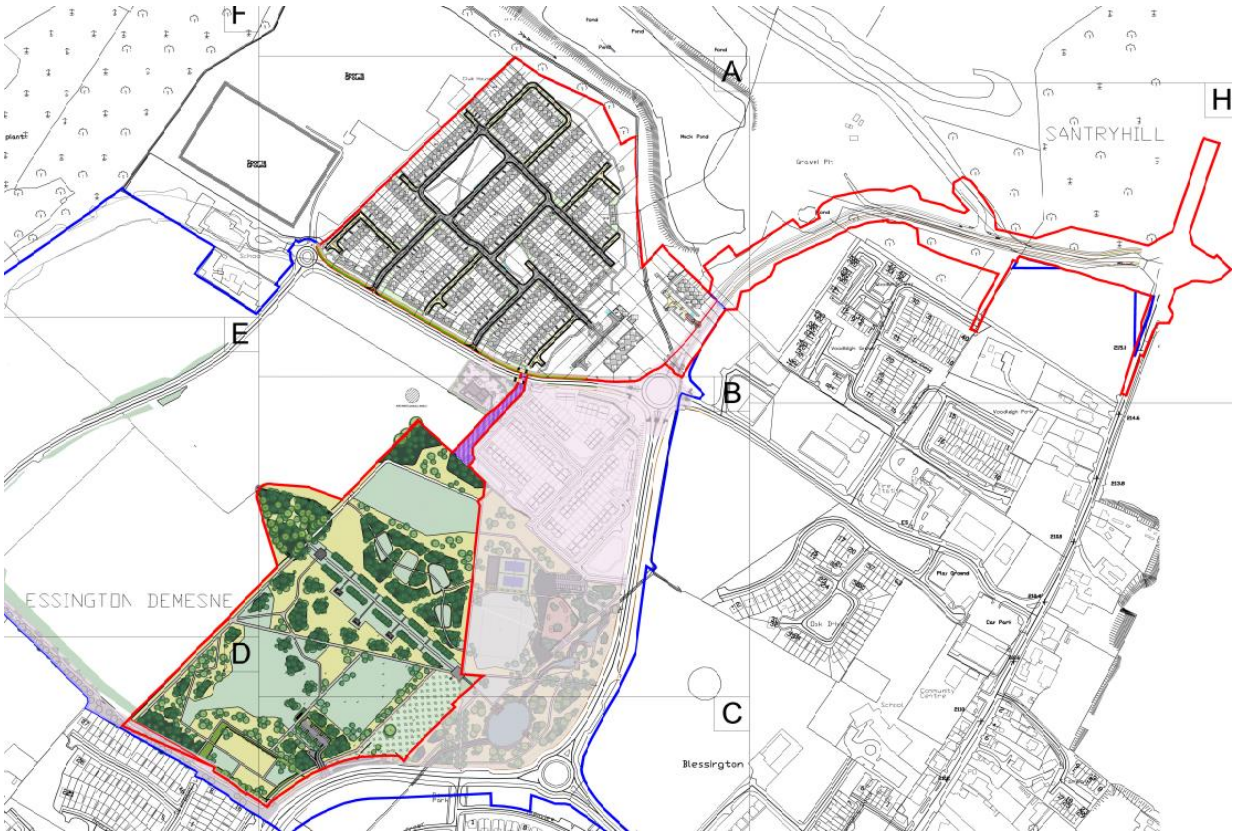

Figure 8 Alternative 4 – Proposed Development Layout

2.3 Reasons for chosen option and comaprison of enviornmental effects

Comparison of Alternatives

It is notable that aside from 'Do-nothing' the alternatives consider the evolution and development of scenarios that have been established since the 2000 Masterplan. As such, the design alternatives consider nuanced improvements in the layout, which are discreet changes in environmental terms.

With reference to Population and Human health, the proposed scheme supports the provision of an important new residential population for Blessington with the inclusion of Parkland Open Space and a hierarchy of amenity spaces. It is considered that Alternatives 1 does not support the need to provide additional homes for the population. Alternatives 2 and 3 do not give a sustainable density of development on greenfield lands.

The provision of Open Space to provide an ecological corridor around the stream is a notable feature of Alternatives 2, 3 and 4 with a reduced impact on biodiversity. It will also result in a greatly improved landscape and visual impact. Alternative 4 provides for a more detailed appraisal of SUDs drainage solutions.

The inclusion of an improved layout in Alternative 4 supports pedestrian links through the site, and future access to adjoining lands. This evolved through design iterations in Alternatives 2 and 3.

The subject site has been the subject of a detailed archaeological investigation (including test trenches) and several areas of potential are located within the subject lands. However, there is no distinction between the alternatives in the impact on archaeology. Hence, the alternative comparison is considered 'neutral'.

Air and noise impacts from the alternatives are broadly similar. Principally, these impacts will occur as a result of the construction phase of the development as operational impacts would be largely restricted to traffic and these volumes are generally low. As these impacts can be largely mitigated through good construction practices, the residual impact is considered low and temporary in all cases.

With regard to Material Assets (Utilities and Waste Management), it is considered the alternatives are similar as they would require servicing and also ESB etc. While the additional quantum of houses will result in increased demand for foul and water supply, these can be accommodated, which is confirmed by Irish Water.

Alternative 4 provides for a more sustainable drainage approach without the need for pumping. The approach to managing levels for the southern site area, supports a much more sustainable in the long term which is significant and positive relative to other alternatives.

Crucially, Alternative 4 provides for the development of the BIRR link road. This ensures that the development provides for the implementation of increased capacity in the road and transport network of the town. This will encourage sustainable modes of transport given the proximity of the subject site to the town centre and service facilities.

Preferred Alternative

With reference to the final layout, the iterative process outlined above, which included alternative site layouts were considered with the objective of producing a new high quality residential development, which has undergone a robust consideration of relevant alternatives having regard to the comparison of environmental effects and meets the requirements of the EIA Directive, based on the multidisciplinary review across all environmental topics.

The proposed design consideration for the subject lands were subject to pre-application meetings with Wicklow County Council as well as a formal LRD meeting with Wicklow County Council. The environmental issues which most informed the design process related to soil, ecology, archaeology, water, layout and permeability. These considerations have informed the consideration of alternative layouts, open space, the issue of road and access arrangements up to the submission of the current scheme. In respect of other items, it is noted that a sustainable level of density is proposed having regard to Government Guidance in the Sustainable Residential Development in Urban Areas (2009).

This EIAR describes an iterative process where the environmental assets and sensitivities of the subject lands are considered and assessed as the scheme evolves over time. The EIA process and consultation with Statutory bodies has allowed the creation of greatly improved residential development with reduced environmental impact and a more integrated relationship with the area.

3. POPULATION AND HUMAN HEALTH

3.1 Introduction

The purpose of this chapter is to identify and assess the potential health and wellbeing effects of the proposed development on the surrounding population, and to deliver evidence-based recommendations.

3.2 Methodology and Receiving Environment

A desktop study was carried out of base line population and other data, including national, regional and local planning policy, school and creche enrolment figures. A social infrastructure audit and report was carried out which accompanies the planning application. A local catchment area was established for analysing population data, creche demand and capacity, and school demand and capacity. A general local catchment area of approximately 2km from the subject site forms the basis of most areas of analysis.

The application relates to development on lands of c.25.14 ha. The site is generally greenfield in nature. The site topography is irregular and generally slopes from the northwest toward the east. There are schools and a wide range of services in the vicinity including Dunnes Stores, a theatre, Main Street, medical provision, sporting and outdoor activities. The site is adjacent to residential development at the southeast, south and southwest. The application site is an irregular shape where a link road forms the site's northwestern perimeter and the Blessington Inner Relief Road (BIRR) bound the southern boundary. A quarry is located generally north of the site. The Blessington no.1 School is located to the west and the Blessington GAA grounds bounds the residential site to the west. Several bus stops exist along the Main Street. Buses provide a service to Dublin (Route No.65) and to Bunclody (Route No. 132). In addition, there is a local link (Route No. 1404) Blessington to Newbridge.

The land use patterns in the vicinity of Blessington, are a varied combination of functions that mirror its urban and rural characteristics. As noted previously, the town functions as a self-sustaining growth centre, accommodating residential, commercial, and service sectors. Beyond its boundaries, the landscape transitions into an amalgamation of agricultural expanses, open green areas, and preserved natural spaces. The rural environs predominantly function as agricultural lands, encompassing livestock and crop cultivation. Furthermore, the proximity of the Blessington Lakes' influences land use, providing source for local leisure activities and water-centric tourism.

3.3 Impact Assessment and Mitigation Measures

Generally, the potential impacts arising during the construction phase relate to quality of life including visual impact / amenity, noise, air quality and transport. Where relevant, these impacts have been considered in the relevant chapters of the EIAR and will be minimised or mitigated where appropriate. The construction phase will generate increased employment and capital spend on materials and services, which will benefit the local economy. It is estimated that the number of workers employed during the construction phase.

In addition to direct employment, there will be substantial off-site employment and economic activity associated with the supply of construction materials and the provision of services such as professional firms supplying professional services to the project.

The effect on Population will be moderate, positive and short-term in terms of socio-economic impact and moderate and negative, slight and temporary in terms of disturbance to daily activities the local population may experience from construction activity at the subject site.

The proposed development is predominantly residential in character, and it is considered that the greatest health and safety risks will be posed during the construction phase of the proposed development. As with any construction site, there will be potential risks to the health and safety in terms of injury or death of construction personnel on-site due to the usage of large, mobile machinery as well as heavy equipment and materials. An Outline Construction Demolition and Waste Management Plan (CDWMP) has been prepared by Enviroguide. This outline plan will be further updated by the contractor and agreed with Wicklow County Council prior to commencement to any construction works on site.

The construction activities will occur in the context of a green-field site, and there are no existing residents at this location that may be disrupted by these works.

The operational phase is considered to have likely significant positive long-term impacts on human beings in relation to the provision of additional residential units, open space, community facilities, active open space (sports field) childcare provision, to cater for the demands of a growing population in accordance with the residential zoning objectives pertaining to the site. The proposed development will introduce a new residential population on a greenfield site 500m from the town centre of Blessington.

The provision of 329 quality homes within the proposed development will have a significant permanent positive impact on the population in the area, contributing to the settlement's growth in a compact manner and accommodating a substantial portion of the planned population growth of Blessington.

Based on the average household size for Blessington settlement (2016 Census) of 2.75 per household, the development would accommodate a new population of approx. 905 persons upon completion This population will also generate additional spending within the area, which will likely have a permanent moderate positive impact on economic activity in the EIAR study area.

It is considered that there is sufficient capacity in the study area to cater for the demand generated by the proposed development. In terms of Population, any impact on of social infrastructure in Blessington would be imperceptible and there would be a neutral to slight positive long-term impact on the Population in terms of addressing education (pre-school) and community needs.

Overall, the development supports the sustainable long-term development of Blessington in accordance with strategic plans for the area. The cumulative impact is considered to be moderate, long-term and positive.

Mitigation measures relating to those factors under which human health effects might occur are addressed elsewhere in the EIAR, under the environmental factors of traffic and transportation, air quality and climate, noise and vibration, townscape and visual and utilities.

The following reports are included with the LRD application material.

- Construction and Environmental Management Plan (CEMP)
- Construction Waste Management Plan (CWMP)
- Construction Demolition and Waste Management Plan

The proposed mitigation measures will avoid, prevent, or reduce impacts on the human environment during the construction and operational phases of the proposed development. Following implementation of the detailed mitigation measures outlined in relevant sections of the EIAR, the residual impact on population and human health is considered to be positive, moderate, and long term in delivering the residential population for Blessington and consistent to the Council's development objectives.

4. BIODIVERSITY

4.1 Introduction

This chapter of the EIAR assesses the biodiversity of the proposed project area and the potential impacts of the proposed Project on the ecology of the surrounding area within the potential Zone of Influence (ZOI). The proposed residential development (referred to as 'the proposed Project'), is located within the townlands of Blessington Demesne, Newpaddocks and Santryhill, Blessington, Co. Wicklow.

It also outlines, the potential impact of the proposed development (in the absence of mitigation), the standard construction, operational and monitoring measures that are proposed to minimise potential impacts and to improve the biodiversity potential of the Site of the proposed Project. The residual impacts (post mitigation) and cumulative impacts are also assessed.

4.2 Methodology and Receiving Environment

A pre-survey data search (desktop study) was carried out in January 202 and updated in August 2023. This included examining records and data from the National Parks and Wildlife Service (NPWS), National Biodiversity Data Centre (NBDC), and Environmental Protection Agency (EPA); in addition to aerial, 6-inch maps and satellite imagery.

Field surveys were carried out based on a schedule of fieldwork elements. The assessment was carried out in accordance with the following best practice methodology: EPA Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, 2022) , Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (EC, 2013) , EU EIAR Guidance and Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland (CIEEM, 2018). The site was surveyed in accordance with the Heritage Council's Best Practice Guidance for Habitat Survey and Mapping (Habitats were identified in accordance with Fossitt's Guide to Habitats in Ireland (Fossitt, 2000). The surveys were carried out in the appropriate survey seasons for mammals, wintering birds, flora and bats. There are no limitations in relation to the surveys carried out for the proposed development.

The study area is within the townlands of Blessington Demesne, Newpaddocks and Santryhill, Blessington, Co. Wicklow. The Deerpark Stream (designated as Liffey_040 in WFD data) flows through the site and ultimately discharges to the Poulaphouca Reservoir. The subject site includes a portion of Dillonsdown Quarry to the north, Roadstone Blessington to the east, the town of Blessington to the south and Blessington GAA grounds and agricultural fields to the west.

4.3 Impact Assessment and Mitigation Measures

Construction

The construction of the proposed development, would potentially impact on the existing ecology of the site and the surrounding area. These potential construction impacts would include impacts that may arise during the site clearance, re-profiling of the site and the building phases of the proposed development. Construction phase mitigation measures are required on site particularly as reprofiling of

the site is proposed which will remove or modify existing terrestrial habitats which can lead to silt laden and contaminated runoff entering the watercourse on site. In addition, the Deerpark Stream flows through the site and ultimately outfalls to the Poulaphouca Reservoir SPA. There is potential for silt laden runoff and contamination to enter the watercourse with potential for downstream impacts.

Designated Natura 2000 sites within 15km:The proposed development is not within a designated conservation site. It should be noted that the Deerpark Stream flows through the proposed development site, which ultimately outfalls to the Poulaphouca Reservoir. In addition, works are proposed on the road network, the surface water drainage of which leads to the Deerpark Stream. Given the proximity of the site to Poulaphouca Reservoir SPA (0.7 km) & Poulaphouca Reservoir pNHA (0.6 km), it is considered that there is a direct hydrological pathway to these conservation sites. In the absence of mitigation, runoff during site clearance, re-profiling, the construction and operation of project elements could impact on the Deerpark Stream and surface water network, with water quality or downstream impacts on the Poulaphouca Reservoir. Impacts via this direct pathway would be seen as the primary vector for impacts on conservation sites. Ensuring water quality and compliance with Inland Fisheries Ireland procedures/ conditions and the Water Pollution Acts and compliance with Inland Fisheries Guidelines would be seen as the primary method of ensuring no significant impact on designated conservation sites. It should be noted that, given that mixing, settlement and dilution would occur within Poulaphouca Reservoir, no other Natura 2000 sites have a direct or indirect hydrological connection or pathway from the proposed development site and no impacts would be foreseen on these sites.

Terrestrial Ecology; No mammals of conservation importance would be impacted by the proposed development. Loss of habitat and habitat fragmentation may affect some common mammalian species including sika deer. There is potential for species of conservation importance to enter the proposed development site between the time of survey and the commencement of the development.

Amphibians and reptiles: Frogs and reptiles were not observed on site. However, given the number of suitable habitats on site frogs are likely to occur on site. The common lizard may occur on site but, was not observed. There is potential for the works to impact on the habitats on site that could potentially support frogs either by direct destruction of the habitats or by onsite pollution or silt ingress.

Bat Fauna: There is no evidence of a confirmed bat roost in the trees that are to be removed on site.. Foraging activity was noted along woodland edges and treelines. The proposed lighting strategy has been discussed and modified to reduce the potential impact on bats. This has included only lighting areas where required and not lighting public open spaces unless necessary. There is potential for bats to utilise trees of bat roosting potential on site that are to be felled, between the time of survey and the commencement of the development. A derogation licence is not required to remove trees of bat roosting potential. However, a pre-construction inspection of trees to be felled will be carried out and a derogation licence acquired if a bat roost is present. Construction lighting has the potential to impact on foraging routes.

Avian Ecology: Site clearance will result in a reduction in the vegetation cover and removal of the mature and immature trees which would result in a nesting and foraging resource loss for the bird species noted on site, particularly in the northern road element of the project. Clearance works on site during bird

nesting season could impact on bird population within the proposed development site. Dust from reprofiling works could potentially impact on vegetation and nesting birds on site within the remaining hedgerows.

Aquatic Ecology. The Deerpark Stream flows through the proposed development site and in stream works are proposed. In the absence of mitigation, in stream works, runoff during site clearance, re-profiling, the construction and operation of project elements could impact on the Deerpark stream and surface water network, with water quality within these watercourses with potential downstream impacts acquatic ecology within this watercourse network and the Poulaphouca Reservoir. The contamination of watercourses and surfaces water networks could potentially impact negatively on the biodiversity within the watercourses and within the shallow marine environment.

Operation

Once constructed all onsite drainage will be connected to separate foul and surface water systems. Surface water runoff will comply with SUDS. The biodiversity value of the site would be expected to improve as the landscaping matures. It would be expected that the ecological impacts in the long term would be neutral, once landscaping has established.

In the absence of standard operational mitigation there is potential silt and petrochemicals to enter the onsite watercourse or surface water networks that lead to Poulaphouca Reservoir SPA & pNHA. The features of interest of the SPA are bird species (Greylag Goose and Lesser Black-backed Gull) and it would be expected that potential impacts would only be seen of the features of interest should a pollution event occur onsite with pollution/silt entering the Poulaphouca Reservoir via the onsite surface water drainage network.

No terrestrial mammals of conservation importance would be impacted by the proposed development. Lighting and increased human presence/disturbance may impact on the potential for the site to accommodate terrestrial mammals of conservation importance. It should be noted that significant dialogue has gone into retaining biodiversity corridors on site and minimising light spill info open space areas, woodland and treelines on site. Landscaping on site will improve the biodiversity value of the site.

There is potential for bat foraging to be impacted by the artificial lighting on site. The proposed lighting strategy has been discussed and modified to reduce the potential impact of the development on bats. This has included only lighting areas where required and not lighting public open spaces unless necessary and using warm lighting on the northern access road. In addition the lighting strategy has included significant planting of trees in openspace areas to encourage bat foraging on site.

There is potential for avian biodiversity to be impacted by the artificial lighting on site. The proposed lighting strategy has been discussed and modified to reduce the potential impact on biodiversity. This has included only lighting areas where required and not lighting public open spaces unless necessary. In addition the lighting strategy has included significant planting of native trees in openspace areas to encourage birds on site.

In the absence of standard operational mitigation there is potential silt and petrochemicals to enter the onsite watercourse or surface water networks that lead to the Poulaphouca Reservoir. The

contamination of watercourses and surfaces water networks could potentially impact negatively on the biodiversity within proximate watercourses.

As the landscaping elements improve with maturity it would be expected that the biodiversity value of the site to birds and flora would also increase. Mitigation measures should be in place to offset the short term nesting resource.

No projects are proposed or currently under construction that could potentially cause significant cumulative effects on biodiversity.

Mitigation measures will be incorporated into the proposed development project to minimise the potential negative impacts on biodiversity within the ZOI. Mitigation measures are outlined within the Land Soil and Geology (Chapter 6), Water (Chapter 7), and the Air and Climate (Chapter 8) of the EIAR. In addition to these mitigation measures mentioned elsewhere in the EIAR specific mitigation in relation to biodiversity need to be implemented having taken into account the measures outlined elsewhere in the EIAR.

5. LAND, SOIL AND GEOLOGY

5.1 Introduction

This chapter details the results of an assessment of the potential impacts of the proposed development on land, soils and geology and sets out any required mitigation measures where appropriate. An assessment of the potential impact on the existing land, soil and geological environment was carried out by Enviroguide Consulting.

5.2 Methodology and Receiving Environment

The assessment was carried out taking cognisance of the appropriate national guidelines and standards for Environmental Impact Assessment using data collected from a detailed desk study, results of the ground investigation, a site walkover survey and review of all relevant drawings and documents pertaining to the site and the Proposed Development. A detailed assessment of the potential impacts was undertaken, and appropriate avoidance and mitigation measures were identified to reduce any identified potential impact associated with the Proposed Development.

5.3 Impact Assessment and Mitigation Measures

The Construction Phase of the Proposed Development will include the excavation of 40,00m3 of soil and subsoil to depths of up to 4.5mbGL for foundations, drainage and infrastructure and the construction of the Blessington Inner Relief Road extension. Where possible, It is intended to reuse suitable excavated topsoil for landscaping and engineering use. However, it is estimated that approximately 4,000m3 of excavated soil will require removal offsite in accordance with all statutory legislation.

The construction of the Proposed Development will also require the importation of 12,000m3 aggregates for the construction of roadways and footpaths. It is anticipated that an additional 7,000m3 of aggregates will also be required for the construction of utility infrastructure.

A preliminary Construction Environmental Management Plan (CEMP) (DBFL, 2023a) and Resource and Waste Management Plan (RWMP) (Enviroguide Consulting, 2023) have been prepared as part of the planning application. The appointed Contractor will further develop the CEMP and RWMP to provide detailed construction phasing and methods to manage and prevent any potential emissions to ground having the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA - C532', CIRIA, 2001).

The CEMP and RWMP will be implemented for the duration of the Construction Phase, covering construction and waste management activities that will take place during the Construction Phase of the Proposed Development.

Mitigation measures will be adopted as part of the construction works for the Proposed Development. The measures will address the main activities of potential impact which include:

- Control and Management of Earthworks;

- Control and Management of Soils and Stockpiles;
- Management and Control Procedures for the Exportation of Surplus Soils and Bedrock;
- Management and Control Procedures for the Importation of Fill Materials;
- Control and Handling of Cementitious Materials;
- Control and Handling of Fuel and Hazardous Materials; and
- Accidental Release of Contaminants.

The Operational Phase of the Proposed Development consists of the typical activities in a residential area and with the exception localised gardening works by residents, there will be no bulk excavation of soils or bedrock or infilling of waste. There will be a land take effect of 25.14Ha for the Construction of the Proposed Development and the land use at the site will change from undeveloped land to residential, public open space and transport land uses.

Overall, there will be no significant adverse impacts on, or associated with the land, soils and geology attributed to the Proposed Development.

6. WATER

6.1 Introduction

This chapter details the results of an assessment of the potential impacts of the proposed development on hydrology and hydrogeology (water) and sets out any required mitigation measures where appropriate. An assessment of the potential impacts on the existing hydrological and hydrological environmental was carried out by Enviroguide Consulting.

6.2 Methodology and Receiving Environment

The assessment was carried out taking cognisance of appropriate national guidelines and standard for the Environmental Impact Assessment using data collected from detailed desk study the results of the ground investigation, a site walkover survey and review of all relevant drawings and documents pertaining to the Proposed Development and site. The results of the assessment provided information on the baseline conditions at the site. A detailed assessment of the potential impacts was undertaken , and appropriate avoidance and mitigation measures were identified to reduce any identified potential impact associated with the Proposed Development.

The Site is located within the Liffey and Dublin Bay WFD Catchment (Catchment I.D.: 09), the Liffey_SC_020 WFD Sub-Catchment (Sub-catchment I.D.: 09_12) and the Liffey_040 River Sub-basin (EU Code: IE_EA_09L010400) (EPA, 2023).

The EPA (EPA, 2023) maps the groundwater body (GWB) beneath the Site as the Blessington Gravels (EU Code: IE_EA_G_047).

The Deerpark_09 Stream / River flows in a southerly direction along the northeast boundary of the northern portion of the Site (i.e., the proposed residential area), crossing the Site near the existing roundabout on Oak Drive and continuing to flow southwest approximately 0.06km east of the southern portion of the Site (i.e., the proposed town park area) through an existing pond and wetland area before converging with the Silveroe River (River Waterbody Code: IE_EA_09L010400) approximately 2.015km downstream of the Site, and ultimately discharging to the Poullaphuca Reservoir (EU Code: IE_EA_09_71) a further 0.05km downstream.

The potential receptors within the receiving water environment are the underlying gravel and bedrock aquifers, the Deerpark_09 Stream / River flows in a southerly direction along the northeast boundary of the northern portion of the Site (i.e., the proposed residential area) and downstream river waterbodies (including the Poullaphuca Reservoir and the River Liffey), downgradient private groundwater supplies including the Blessington PWS which extends into the southern portion of the Site (i.e., the proposed town park area) and downstream surface water drinking water users.

Surface water from the Proposed Development will be managed in accordance with the principles and objectives of Sustainable Drainage Systems (SuDS) and the Greater Dublin Sustainable Drainage System (GDSDS) to treat and attenuate water before discharging at green field runoff rates to the Deerpark_09 Stream / River.

6.3 Impact Assessment and Mitigation Measures

Foul water will discharge to the existing 225mm UE foul sewer located in the existing roundabout on Oak Drive. Water supply to the Proposed Development will be from the existing 150mm uPVC UE water main located in the existing roundabout on Oak Drive. The UE CoF letter (UE COF Reference: CDS20005303) states that the wastewater and water supply connections are feasible subject to infrastructure upgrades which will be completed as part of the construction of the Proposed Development.

A preliminary Construction Environmental Management Plan (CEMP) (DBFL, 2023a) has been prepared as part of the planning application. The appointed Contractor will further develop the CEMP to provide detailed construction phasing and methods to manage and prevent any potential emissions to the receiving water environment having the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA - C532', CIRIA, 2001).

The CEMP will be implemented for the duration of the Construction Phase, covering construction and waste management activities that will take place during the Construction Phase of the Proposed Development.
Mitigation measures will be adopted as part of the construction works on the site. The measures will address the main activities of potential impact which include:

- Control and Management of Earthworks;
- Control and Management of Soils and Stockpiles;
- Management and Control Procedures for the Exportation of Surplus Soils and Bedrock;
- Management and Control Procedures for the Importation of Fill Materials;
- Control and Handling of Cementitious Materials;
- Control and Handling of Fuel and Hazardous Materials; and
- Accidental Release of Contaminants.

During the Operational Phase surface water runoff from the site will be managed in accordance with the principles and objectives of SuDS and the GDSDS to treat and attenuate water prior to the outfall points from the site. Ongoing regular maintenance of the proposed drainage including the SuDS measures in accordance with CIRIA SuDS Manual C753 will be incorporated into the overall management strategy for the Proposed Development.

Overall, there are no significant residual impacts on hydrology and hydrogeology anticipated and there will be no impact to the existing WFD Status of water bodies associated with the Proposed Development including the Liffey_040 (named by the EPA as the Deerpark_09 Stream / River), the Poullaphuca lake waterbody, the Blessington Gravels GWB and the Kilcullen GWB as a result of the Proposed Development taking account of design avoidance and mitigation measures where required.

7. AIR AND CLIMATE

7.1 Introduction

This Chapter examines the potential for the Proposed Development to impact upon air quality and climate within the vicinity of the Site. This Chapter also describes and assesses the impact of the Proposed Development on local climate and on global climate in a wider context.

7.2 Methodology and Receiving Environment

The primary sources of dust identified include soil excavation and earthworks, temporary stockpiling of potentially dusty materials and use of unsurfaced haul roads, cutting and grinding of materials, demolition, bulk material transportation, loading and unloading, stockpiling materials, cutting and filling, and vehicular movements (HGVs and on-site machinery) and, during the latter phases of the Construction Phase, storage, handling and movement of materials generated during the associated works.

In line with Transport Infrastructure Ireland guidelines (TII, 2011), a semi-quantitative has been undertaken to assess the potential dust emission effects. To account for a worst-case scenario, the Proposed Development is considered to be major in scale due to the size of the site and the duration of construction activities. Therefore, it can be assumed that there is potential for significant dust soiling effects on receptors within 100m from the Site. There are a number of high-sensitivity receptors (residential dwellings and a school) located within 100m of the site boundary, the closest receptors are located to the west, east and south of the Site. Dry days with moderate to high windspeeds (above 5m/s) are the conditions which are most likely to result in fugitive dust emissions. Receptors located to the west of the Site would require prevailing winds from the east to be potentially impacted by fugitive dust emissions. At these receptors, the frequency of winds (>5m/s) occurring from the direction of the dust source on dry days is 1.79%. Receptors located to the east of the Site would require prevailing winds from the west to be potentially impacted by fugitive dust emissions. At these receptors, the frequency of winds (>5m/s) occurring from the direction of the dust source on dry days is 3.36%. And finally, receptors located to the south of the Site would require prevailing winds from the north to be potentially impacted by fugitive dust emissions. At these receptors, the frequency of winds (>5m/s) occurring from the direction of the dust source on dry days is 0.18%. Therefore, appropriate conditions for fugitive dust emissions at these receptors are highly infrequent.

7.3 Impact Assessment and Mitigation Measures

It is expected that the following mitigation measures will prevent nuisance dust from resulting in any adverse impacts:

- During working hours, dust control methods will be monitored as appropriate, depending on the prevailing meteorological conditions;
- The name and contact details of a person to contact regarding air quality and dust issues will be displayed on the site boundary, this notice board should also include head/regional office contact details;

- Community engagement will be undertaken before works commence on-site explaining the nature and duration of the works to local residents and businesses;
- A complaints register will be kept on site detailing all telephone calls and letters of complaint received in connection with construction activities, together with details of any remedial actions carried out;
- The contractor must demonstrate full compliance with the dust control conditions;
- At all times the procedures put in place are to be strictly monitored and assessed;
- Dust minimisation measures will be reviewed at regular intervals during the works to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust through the use of best practice and procedures. In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed, and satisfactory procedures implemented to rectify the problem;
- A speed restriction of 20 km/hr will be applied as an effective control measure for dust for on-site vehicles using unpaved haul roads;
- Construction access to the site will be directly from the existing road reservation on Oak Drive and is located close to sensitive receptors. Refer to DBFL drawing 220145-2-95-SW-XXX-DR-DBFL-CE-1201 for further information;
- Bowsers or suitable watering equipment will be available during periods of dry weather throughout the construction period;
- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic;
- Furthermore, any road that has the potential to give rise to fugitive dust must be regularly watered, as appropriate, during dry and/or windy conditions;
- During periods of very high winds (gales), construction activities likely to generate significant dust emissions should be postponed until the gale has subsided;
- Overburden material will be protected from exposure to wind by storing the material in sheltered regions of the Site. Where possible storage piles should be located downwind of sensitive receptors;
- Where feasible, hoarding will be erected around site boundaries. This will have the benefit of reducing the impact of larger particles on nearby sensitive receptors;
- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities such as rock blasting or earthworks are necessary during dry or windy periods;
- Before entrance onto public roads, trucks will be adequately inspected to ensure there is no potential for dust emissions and will be cleaned as necessary;
- In the event of dust nuisance occurring outside the site boundary, movements of materials likely to raise dust will be curtailed and satisfactory procedures implemented to rectify the problem before the resumption of construction operations;

- Vehicles delivering or collecting material with potential for dust emissions will be enclosed or covered with tarpaulin at all times when practicable to restrict the escape of dust; and
- At the main site traffic exit, a wheel wash facility will be installed. All trucks leaving the Site must pass through the wheel wash. In addition, public roads outside the site will be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary.

As part of dust management measures, it is recommended that dust deposition monitoring be put in place during the Construction Phase of the Proposed Development to ensure dust mitigation measures are adequately controlling emissions.

Construction vehicles and machinery during the Construction Phase will temporarily and intermittently generate exhaust fumes and consequently potential emissions of volatile organic compounds, nitrogen oxides, sulphur oxides, and particulate matter (dust). Dust emissions associated with vehicular movements are largely due to the resuspension of particulate materials from ground disturbance. Air pollutants will increase due to construction-related traffic and machinery from the Proposed Development; however, any such increase is not considered significant and will be within relevant EU Directive ambient air quality standards. According to TII (2011), the significance of impacts due to vehicle emissions during the Construction Phase will be dependent on the number of additional vehicle movements, the proportion of HGVs and the proximity of sensitive receptors to the Site's access routes. If construction traffic would lead to a significant change (> 10%) in Annual Average Daily Traffic (AADT) flows near to sensitive receptors, then concentrations of nitrogen dioxide, PM_{10} and $PM_{2.5}$ should be predicted in line with the methodology as outlined within TII guidance. Construction traffic is not expected to result in a significant change (> 10%) in AADT flows near to sensitive receptors; the highest change in AADT flows near to sensitive receptors is 7.4%. Therefore, a detailed air quality assessment has been scoped out of the EIA.

The most likely potential effect on air quality during the Operational Phase of the Proposed Development is from traffic-related air emissions.

It is predicted that fossil fuel combustion gas emissions including carbon dioxide, sulphur dioxide, nitrogen oxides, carbon monoxide and hydrocarbon particulate emissions will be minor and ongoing for the life of the development and will not have a significant adverse impact on the existing ambient air quality in the vicinity of the Proposed Development Site. The air dispersion modelling concluded that the Proposed Development is likely to result in a long-term increase in NO_2 concentrations on the roads surrounding the Proposed Development Site. The results determine that there may be some 'imperceptible', and 'small' increases in concentrations of NO_2 at worst-case receptors assessed when compared with 'Do Minimum' levels; with the highest predicted increase of 0.28 µg/m^3 and 0.45 µg/m^3 measured at receptor R1 in the opening year and design year 'Do Something' scenarios, respectively; however, this increase in traffic has been determined to have an overall insignificant impact in terms of local air quality. Furthermore, the increase in traffic has been determined as marginal with regard to climatic impacts. Therefore, no residual significant impacts are anticipated from the proposed scheme in the context of air quality and climate.

There is the potential for combustion emissions from onsite machinery and traffic derived pollutants of Carbon Dioxide (CO_2) and Nitrous Oxide (N_2O) to be emitted during the Construction Phase of the development. However, due to the size and duration of the Construction Phase, and the mitigation measures proposed, the effect on national greenhouse gas (GHG) emissions will be insignificant in terms of Ireland's obligations under the Kyoto Protocol and therefore will have no considerable impact on climate. Overall, climatic impacts are considered to be short-term and imperceptible.

An Energy Statement and Part L Compliance Approach report has been prepared for the Proposed Development by Waterman Moylan (2023) and has been included in this EIAR as Appendix 8C. This report identifies the energy standards with which the Proposed Development will have to comply and also sets out the overall strategy that will be adopted to achieve these energy efficiency targets.

The dwellings will be required to minimise overall energy use and to incorporate an adequate proportion of renewable energy in accordance with Building Regulations Part L 2022, Conservation of Energy & Fuel.
The design and construction of all buildings in accordance with Building Regulations Technical Guidance Document (TGD) Part L 2021 will ensure that modern building materials are used and that they are designed to be thermally efficient resulting in a reduction in the volume of fossil fuels required to heat the buildings.

A Site-Specific Flood Risk Assessment (SSFRA) was undertaken for the Proposed LRD Development by DBFL (2023). The SSFRA concluded the:

- Proposed LRD Development is appropriate for the Site's flood zone category; and
- Planning System and Flood Risk Management Guidelines Sequential Approach is met and the 'Avoid' principal achieved.

The Proposed Development was concluded as having a good level of flood protection up to the 100-year return event. For pluvial floods exceeding the 100-year capacity of the drainage system then proposed flood routing mitigation measures are recommended.

A Site-Specific Flood Risk Assessment (SSFRA) was undertaken for the Blessington Inner Relief Road by DBFL (2023). The SSFRA concluded the:

- The sequential approach outlined in The Planning System and Flood Risk Management Guidelines has been adhered to; and
- Based on the proposed mitigation measures, the proposed infrastructure is appropriate.

The development was concluded as having a robust level of flood protection up to the 100-year return event and a design complying with the GDSDS (Greater Dublin Strategic Drainage Study) design requirements. DBFL noted that additional enhancements have been provided in terms of attenuation provisions/volumes, SUDs etc. over and above standard GDSDS.

Following the implementation of the proposed mitigation and monitoring measures contained in the specialist Air Quality and Climate Chapter and the wider EIAR, the predicted direct and indirect impacts associated with the Proposed Development with respect to Air Quality and Climate are considered to be 'short-term', 'imperceptible' and 'negative' during the Construction Phase; and be long-term, 'negative' and 'imperceptible' during the Operational Phase.

8. NOISE AND VIBRATION

8.1 Introduction

This chapter identifies and assesses the potential noise and vibration impacts and related potential effects arising from both the construction and long-term operational phases of the proposed Development.

8.2 Methodology and Receiving Environment

The methodology adopted is in accordance with the relevant guidelines as listed in detail in the EIAR chapter. The guidance and standards were primarily used to plan the baseline survey and to set suitable noise and vibration criteria for the assessment of noise and vibration impacts and effects on human beings. In particular, the TII Guidelines (2004 & 2014) were applied to the assessment of impacts and effects associated with the proposed road element. As part of the methodology applied, a traffic noise model was developed using SoundPLAN Noise Version 9.0 software loaded with the CRTN calculation methodology. Traffic noise predictions were completed for the existing and future traffic flow scenarios including the Do Minimum and Do Something Opening Year (DMOY & DSOY)) 2026 and DM Future Year (DMFY) 2041 and DSFY 2041. The model was validated using the baseline data recorded.

The receiving sound environment has been characterised by both field survey and desk-based study. Nine monitoring locations were chosen including 24-hour monitoring at two locations. Ambient sound monitoring was undertaken at the NSLs off the existing BIRR, within developments such as Woodleigh which are closest to the proposed road element and also within the site to evaluate typical existing transportation noise affecting the residential element of the proposed Development for the purposes of determining the noise exposure risk of future residents.

The proposed Development site is located to the northwest of Blessington and is, for the most part, used for grazing. Part of the site designated for the proposed northern section of the BIRR is within an area that was part of a quarry and is still used for access to an active quarry to the northwest which is screened from the site by high berms. The soundscape is relatively quiet on the subject site except in proximity to existing roads where road traffic noise predominates. Due to potential indirect effects associated with the proposed road element, the study area extends out 300m from the existing BIRR. The soundscape at Noise Sensitive Locations (NSLs) along the existing BIRR is generally dominated by road traffic noise which reduces with screening from road-facing dwellings and distance from the road.

The noise exposure risk rating for future residential is low to negligible based on the existing soundscape although this will change for parts of the site to low to medium when the new road is constructed. Existing residential developments such as Woodleigh Grove, Way and Avenue are currently relatively quiet with little traffic noise impact.

There are no potential long-term sources of vibration affecting the site.

8.3 Impact Assessment and Mitigation Measures

Site development and construction works can potentially give rise to temporary to short term noise and vibration impacts and effects through the use of mobile and non-mobile heavy machinery and equipment. Proposed construction working hours will extend from 07.00 – 18.00 hrs Mon-Fri and 08.00 – 14.00 hrs Sat. There will be no construction on Sundays or public holidays.
Construction noise and vibration impacts have been assessed in relation to the nearest NSLs to the proposed works at Woodleigh Way, Woodleigh Avenue, Blessington No. 1 school and Deerpark Walk.

The expected impact magnitude rating in the absence of mitigation range from temporary minor negative (Blessington No. 1 School) to temporary major negative for some elements of construction works when they occur in close proximity to boundaries with NSLs. In order to determine if a significant effect has occurred, the duration of works must be considered. As works will move away from boundaries, the predicted durations of elevated construction noise levels are not expected to exceed:

- 10 or more days or nights in any 15 consecutive days or nights;
- A total number of days exceeding 40 in any 6 consecutive months.

Accordingly, significant effects are not likely to occur.

Out of hours construction work may be required for foul drainage and water mains connections in relation to the road construction. In this regard, construction works for services connections extend into Woodleigh near No. 40 Woodleigh Avenue. These works are likely to exceed the TII acceptable limit of 60 dB ($L_{Aeq,1hr}$) for out of hours work. The impact magnitude rating is therefore major negative in the absence of mitigation. However, these works will be very short in duration <1 week, therefore a significant effect is not predicted to occur.

Mitigation measures to minimise the impact of site development and construction noise on the nearest NSLs and to fully ensure compliance with construction threshold values and therefore reduce impacts magnitude ratings will be implemented. A list of noise and vibration management measures shall apply to the proposed Development to ensure the threshold values are complied with. It should be noted that as works move away from NSLs and/or as new buildings provide screening, it is expected that construction noise levels will reduce to well below the threshold values values for the majority of the duration of the total works.

The magnitude of noise impact arising from construction traffic on the local road network will be short term negligible to minor and therefore not significant.

With regards to vibration effects, existing sensitive receptors are considered to be sufficiently distant from the proposed works so as to be unaffected by vibrations. No piling or rock-breaking are proposed although the use of rollers may lead to the generation of transient vibrations. Precautionary vibration monitoring is proposed at Woodleigh to ensure compliance with the limit values at vibration sensitive receptors and shall be included in the CEMP as a preventative measure.

The proposed new northern section of the BIRR has the potential to change traffic noise at existing NSLs by introducing a new road traffic source to areas where previously there were none and by altering traffic flows on existing routes.

In the short to medium term, the predicted impact magnitude of traffic noise changes on existing routes is negligible positive or negative to minor positive or negative and therefore not significant.

In the long term, the predicted impact magnitude of traffic noise changes on existing routes is negligible positive or negative to minor negative and therefore not significant.

The introduction of the new northern section of the BIRR in areas where previously there had been no route will increase predicted negative impacts to major negative in the short to medium term reducing to moderate negative in the long term at existing NSLs in Woodleigh Grove, Way and Avenue. The effects are therefore significant.

It is noted that in the future, further development may occur between existing NSLs in Woodleigh and the proposed road which will serve to screen traffic noise to existing NSLs. It should also be noted that the predicted absolute future noise levels are not excessively high. In this regard, no existing NSLs satisfy all 3 conditions for noise mitigation as defined by the TII Guidelines as follows:

- The combined expected free-field maximum traffic noise level, i.e. the relevant noise level from the proposed road and traffic noise from existing roads in the vicinity is greater than the absolute design goal of 60 dB L_{den} specified in the TII Guidelines;
- The relevant noise level is at least 1 dB more than the expected traffic noise level without the proposed road in place;
- The contribution to the increase in the relevant noise level from the proposed road development is at least 1 dB.

(It should be noted that the proposed road will have a low noise surface as part of its intrinsic design which has already been accounted for in the traffic noise predictions).

With regard to noise exposure risk for future residents and good acoustic design, the following is noted:

- The risk assessment has regard to any reasonably foreseeable changes in existing and/or new sources of noise. The output from the traffic noise model for DSFY 2041 in terms of $L_{Aeq,16hr}$ and L_{night} across the residential lands was prepared. Under this scenario, the majority of the site continues to fall under a negligible to low risk rating as determined during the baseline survey but approaching a low to medium risk rating closer to the roads.
- Based on the future predicted traffic flows (DSFY 2041) it is expected that the majority (94.5%) of units will meet the recommended good internal daytime ($L_{Aeq,16hr}$) conditions with partly opened windows with the exception of 5 units in the apartments on the eastern façade (A13.2 – A13.6) and 12 housing units south facing facades along Oak Drive (A1.12 – 14, A8.1, A8.29 – 30, A9.22 – 24, A10.1 and A10.29-30) where reasonable as opposed to good daytime conditions will be met with partially open windows.
- During the night-time, the majority (91%) of units are expected to meet good internal conditions with partially open windows. The following units will not meet good to reasonable internal night-time conditions with partially open windows:
    - 6 apartment units east facing facades (A13.1 – 6), 6 duplexes south facing facades (A14.1, 3,5,7,9,11) and 3 duplexes north facing facades (A14. 8,10,12).

- 20 housing unit facades facing onto Oak Drive west. These units are (A1.12 – 14, A8.1 – 2, A8.29-30, 29-30, A9.21 – 24, A10.1-2, A10.25 – A10.30).

- Designing the site layout and dwellings so that the recommended internal criteria can be achieved with open windows in as many properties as possible demonstrates good acoustic design.
- In addition, the building envelopes have been assessed and mitigation is specified the Noise and Vibration chapter to ensure the recommended good internal conditions are met with closed windows and open natural vents in all units.
- Based on the predicted traffic noise contours for DSFY2041 $L_{Aeq,16hr}$, it is expected that the majority of gardens, apartment and duplex private open space and all of the public open space proposed will comply with the ideal range *50 -55 dB* $L_{Aeq,16hr.}$
- The balconies on the east façade of the apartment block, units (A13.2 – 6) will not meet the ideal range and are predicted to be in the 55 – 60 $L_{Aeq,16hr.}$ However, there is ample external public space meeting the range that is part of the overall design, thus meeting the requirements of good acoustic design.
- The gardens associated with housing units A1.12, A8.1, A9.22, A10.1 will partly meet the ideal range. Assuming, as expected, that the boundary treatment to these gardens facing the road will achieve a minimum surface density of 10kg/m^2, it is considered that the ideal external range will be met throughout these gardens.

9. LANDSCAPE AND VISUAL IMPACT

9.1 Introduction

The Landscape and Visual Impact Assessment (LVIA) has been undertaken to assess the landscape and visual impact of the proposed development. Landscape and visual impact assessments are separate but closely related topics.

9.2 Methodology and Receiving Enviornment

The sensitivity of the landscape is a function of its land use, landscape patterns and scale, visual enclosure and the distribution of visual receptors, and the value placed on the landscape. The nature and scale of the development in question is also taken into account. For the purpose of assessment, five categories are used to classify the landscape sensitivity of the receiving environment.

Visual assessment considers the changes to the composition of views, the character of the views, and the visual amenity experienced by visual receptors. The assessment is made for a number of viewpoints selected to represent the range of visual receptors in the receiving environment. The significance of the visual effects experienced at these locations is assessed by measuring the viewpoint sensitivity against the magnitude of change to the view resulting from the proposed development.

Definitions and descriptions of sensitivity, magnitude of change and quality and longevity of effects are derived from the GLVIA. The GLVIA does not set out specific definitions of descriptions used but contains key widely used principles and case studies / examples that are intended to inform a professional's methodology, supported by their experience and judgements in relation to visual effects and landscape change. These descriptions expand and complement the EPA guidelines as intended in relation to topic specific guidance.

9.3 Impact Assessment and Mitigation Measures

Landscape and Visual Amenity

A number of features of the surrounding landscape are visible from these lands, lending it context / legibility and a broadly benign / positive character. Towards the north, the hilltop quarry site is partly visible, where the landscape has been eroded and degraded due to quarrying.

Sections of the residential development site area is visible from certain parts of the town, due to the slightly elevated nature of the site compared to its immediate settings and lack of vegetation and woodlands in the area. The site's visibility is expected to drop slightly, locally, as the permitted Phase 1 development (WCC reg. ref: 20/1146 and ref: 22/1191), located south of the Oak Drive, is being developed.

The landscape is mixed in the BIRR site area. There are wooded areas, fallow/rewilding parcels and degraded landscape areas where quarry spoil is palpable. A large section of this area of the site (i.e. from its eastern end to near its centre) is brownfield in nature, in that it is occupied by the existing quarry road, with a highly regular number of Roadstone HGVs entering/leaving the site along it.

The views are limited from the eastern end of the BIRR site area due to the woodlands. There are some views along the northern part of the area, north of the Woodleigh neighbourhood, where there is little vegetation.

Overall, there is a mixed landscape quality and character, as well as visual amenity, at this BIRR site area.

The Town Park site area is located north of the Inner Relief Road, north and east of Deerpark neighbourhood, and west of the Phase 1 permitted development site. The Park area is mostly within the former Downshire Demense. The site is bound by agricultural fields to the west / north-west.

There are remains of the historical ruins of the Downshire House and Demense. Ruins of the house, boundary stone walls and outbuildings are visible overground.

The landscape resource of the subject site contains some valued elements, features or characteristics, such as a demesne setting; historical remains and ruins, parkland and trees. In addition, the site and environs are zoned for development. Within the development plan and the Blessington LAP, there are extensive policy objectives for the suitable development of the site area.

The subject site is located on the fringes of existing urban areas to the south. The landscape in this broader area is mixed and not particularly strong, i.e., there is a mix of land uses with varying character, including parklands, quarry site, urban and residential areas, educational and sporting facilities etc. There are permitted planning permissions in the immediate area that are yet to be constructed and therefore, the landscape character is evolving.

On balance of the multiple factors set out above, the landscape sensitivity of the subject lands is classified as 'Medium'.

The construction stage will involve the removal of some vegetation and the planting of new vegetation, across the site. Within the BIRR area of the site, there will be the removal of 53 trees, two groups of trees and the partial removal of seven groups of trees, two hedgerows, as well as the protection of retained hedgerows and trees on site, where applicable. However, also within the BIRR area of the site, it is proposed to plant: 83 No. specimen trees; 5026m^2 of woodland planting; 1309m^2 of shrubs; 798 linear metres of hedgerow; 129m^2 of bulbs. No trees will be removed as part of the proposed development within the Phase 2 residential area of the site, but it is proposed to plant in this area of the site: 1,683 trees; approx. 5000m^2 of ornamental shrubs & groundcover; approx. 5000m^2 of woodland/woodland scrub; approx. 4000m^2 of wildflowers; approx. 3000m^2 of lawn/short-cut meadow. In addition, no trees will be removed as part of the proposed development within the Phase 2 Park area of the site. However, it is proposed to plant in this area of the site: 622 trees; approx. 2,500m^2 of ornamental shrubs & groundcover; approx. 15,000m^2 of woodland/woodland scrub; approx. 20,000m^2 of wildflowers; approx. 25,000m^2 of lawn/short-cut meadow. In summary, the vegetation lost - including trees - will be a minute fraction of the vegetation gained – including trees - as a result of the proposed development.

Overall, the effects during construction would be intensive across the site and immediate environs. The magnitude of change would be 'High', resulting in the loss of agricultural lands / grazing fields, as well as trees and some hedgerows across the overall site. This would change the character of the landscape and, in accordance with Table 10.3, when combined with a 'Medium' landscape sensitivity, it would generate a landscape effect that would be 'Significant' for construction-stage effects.

The site's enhancement values reflect a significant body of policy that is supportive of major landscape change at this location. These will form residential neighbourhoods, a town park and road infrastructure to support this sustainable urban development. The landscape quality, integrity and character are mixed, with the site currently surrounded by landscape change, being adjacent to palpable urbanisation over the last quarter century. Nonetheless, it offers attractive characteristics to contribute to this new environment, which have been reflected in its conservation values, as set out in Section 10.4.4.3, above.

The impact of the proposed development would be the change of the site from a mostly greenfield/ partly brownfield landscape (i.e. in the latter case, of sections of the BIRR area of the site) to a new residential neighbourhood, a regional park and inner relief road infrastructure. However, the proposed development has been laid out to incorporate many of these existing landscape 'green infrastructure' features within its landscape structure of open spaces and networks, and particularly within the proposed park.

The operational stage will also experience the further growth and maturation of the substantial quantity of planting/vegetation associated with the proposed development, further engendering desirable place-making qualities.

The proposal would introduce a residential development, a town park and inner relief road into the landscape, which, although may be new and prominent, is not uncharacteristic of the area. The proposed development achieves local policy objectives of Wicklow County Council and is in keeping with local land use zoning. Its scale and effect would be transformational along the northern edge of the town, but important to be so, in order to contribute positively to local place-making.

Mitigation

The remedial measures proposed revolve around the implementation of appropriate site management procedures, such as the control of site lighting, storage of materials, placement of compounds, delivery of materials, car parking, etc. Visual impact during the construction phase will be mitigated somewhat through appropriate site management measures and work practices to ensure the site is kept tidy, dust is kept to a minimum, and that public areas are kept free from building material and site rubbish.

Site hoarding will be appropriately scaled, finished and maintained for the period of construction of each section of the works as appropriate. To reduce the potential negative impacts during the construction phase, good site management and housekeeping practices will be adhered to. The visual impact of the site compound and scaffolding visible during the construction phase are of a temporary nature only and therefore require no remedial action other than as stated above.

It is noted that a Construction Environmental Management Plan has been prepared by the project engineer, which incorporates the above site management procedures. This Management Plan will inform a revised Construction Environmental Management Plan to be prepared by the appointed contractor prior to the commencement of development and agreed with the Planning Authority.

Overall, given the planning policy for the area, the intensification of land use, as it changes from now mixed-use, farmland and former quarry site into a residential development and road infrastructure is a change that cannot be mitigated. However, these proposals reflect best practice in residential area layout and connectivity, reflect the concepts in the wider masterplan and will consolidate the urban area here with an overall beneficial effect locally and to the wider surrounding area. No significant residual impacts are predicted in relation to landscape and visual amenity.

10. CULTURAL HERITAGE

10.1 Introduction

This chapter identifies and assesses the archaeological and cultural heritage arising from both the construction and operational phases of the proposed development.

10.2 Methodology and Receiving Environment

Research for this assessment has been undertaken in four phases. The first phase comprised a paper survey of all available archaeological, architectural, historical and cartographic sources. The second phase involved a field inspection of the proposed development area. The third phase comprised a programme of archaeological geophysical survey and the fourth phases a programme of archaeological testing. Additional field inspections have been carried out since the completion of archaeological fieldwork.

Field inspection is necessary to determine the extent and nature of archaeological, architectural, and historical remains and can also lead to the identification of previously unrecorded or suspected sites and portable finds through topographical observation and local information. The proposed development area was initially inspected in September 2020. Additional site visits have been carried out since that date, in January, March and June of 2023.

Geophysical survey is used to create 'maps' of subsurface archaeological features. Features are the non-portable part of the archaeological record, whether standing structures or traces of human activities left in the soil. Geophysical instruments can detect buried features when their electrical or magnetic properties contrast measurably with their surroundings.

A geophysical survey was undertaken within the proposed development in December 2020 in order to inform the overall development of the lands under the ownership of the applicant (Nicholls 2020, Licence Ref.: 20R0236). The results of the geophysical survey relevant to the proposed development area are provided in this assessment.

Archaeological Test Trenching can be defined as 'a limited programme... of intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land or underwater. If such archaeological remains are present test trenching defines their character and extent and relative quality' (CIfA 2020a, 4). A programme of archaeological testing based on the results of the geophysical survey was carried out within the proposed development and surrounding environs in March 2021 (Ní Cheallacháin 2021, Licence Ref.: 21E0133). The results of the test trenching relevant to the proposed development area are provided in this assessment.

The overall proposed development area is located within the townlands of Blessington Demesne, Newpaddocks, Santryhill and Holyvalley. These townlands are located in the parish of Blessington and barony of Talbotstown Lower, County Wicklow. There are a number of recorded archaeological sites located within the overall proposed development area. Three sites are located within the proposed park, that comprise the site of Downshire House (RMP WI005-018) and an ornamental lake (RMP WI005-016). A redundant record is also located in the northeast corner (RMP WI005-017). The northern section of

an early medieval ringfort is located within the proposed residential portion of the development area (RMP WI005-023). There are a further 12 sites recorded within the 500m study area.

10.3 Impact Assessment and Mitigation Measures

There are no protected structures, nor structures listed in the NIAH, within the overall proposed development area. A group of structures listed in the RPS and NIAH, which form the historic core of Blessington Village are located on the periphery of the study area. The closest protected structure is the former Market House (RPS 05-05), located c. 495m to the southeast. The closest NIAH structure is a house (NIAH 16303026), located c. 245m to the south-southwest.

The proposed park element of the development occupies the former demesne landscape associated with Downshire House. It is not a recorded monument in its own right, but contains the buried and upstanding remains associated with the late 17th century geometric gardens that were originally established when the house was constructed. The house was burnt in 1798 and was in ruins for a number of years before being demolished. It is important to note that as part of a permitted residential development, residential development has commenced to the immediate east of the proposed park, with the southern portion of the original demesne incorporated into phase 1 of the park.

Park Development

The site of Downshire House (RMP WI005-131) and the adjacent site of outbuildings, along with the ornamental lake (RMP WI005-016) will be preserved in-situ as part of the park development. Any paths that cross the site of the house will be constructed by means of a no-dig method. The remains of the extant cellar and the site of outbuildings will be fenced off and preserved in-situ with an appropriate grill placed across the cellar void to prevent access. The preservation of the house site, lake site and associated archaeology and the re-use of the original recreational landscape as a park is considered to represent a very significant direct positive impact for the heritage of the area.

Ground disturbances associated with the proposed car park area and associated potential services (including drainage and lighting) may have a direct negative impact on sub-surface features associated with the geometric gardens, which have been identified at a depth that varies from 0.3m to 0.8m below the current ground level. The impact may vary from moderate to very significant prior to the application of mitigation.

As part of the proposed development, some areas will require excavation and the removal and re-use of the existing spoil heaps that currently characterise the site. Spoil will be used for localised landscaping, up to 1.5m in depth across the park. Where spoil is required for landscaping, the levels containing the remains of the geometric gardens will be preserved in-situ. This represents a significant direct positive impact for the heritage of the area.

Garden features such as the bastion, existing boundary walls and elements of the walled garden in the southern part of the site, will be retained as part of the development, but will require repair and conservation. If works are no carried out with the correct conservation input, negative direct impacts may occur in relation to the structures, which would be very significant.

Overall ground works associated with any remaining elements of the proposed park development may have a direct negative impact on previously unrecorded archaeological feature or deposits that have

the potential to survive beneath the current ground level, which may relate to the former geometric gardens and/or earlier archaeological features. The impact may vary from moderate to very significant prior to the application of mitigation.

Residential Development

The layout, density, engineering and attenuation requirements of the proposed residential development means that it is not possible to avoid direct impacts on AA1 and AA6-9. Preservation in-situ of the archaeological areas was explored by the design team but it was not possible to preserve the remains without materially affecting the density requirements for the residential element. As such, ground disturbances associated with the development will results in direct negative impacts on the identified archaeological remains. Prior to the application of mitigation impacts on Ringfort WI005-130 will be significant (as small section of this site will be preserved in-situ). Impacts on AA6-9 will be very significant.

A section of demesne wall that crosses this area will be retained as part of the development, but will require repair and conservation. If works are no carried out with the correct conservation input, negative direct impacts may occur in relation to the structure, which would be significant.

The stream that runs through this portion of the proposed development area will be retained with an appropriate set back to development. Ground disturbances associated with the small section of housing proposed to the east of the stream, has the potential to directly and negatively impact archaeological remains that may survive in the area, with no surface remains. The impacts may vary from moderate to very significant prior to the application of mitigation and dependant on the nature of any such remains that are identified.

Overall ground works associated with any remaining elements of the proposed residential development may have a direct negative impact on previously unrecorded archaeological feature or deposits that have the potential to survive beneath the current ground level. The impacts may vary from moderate to very significant prior to the application of mitigation.

Road Development

The construction of the road development will result in the removal of a short section of demesne wall associated with Downshire House demesne. This represents a direct, negative impact of moderate significance.

Whilst the footprint of the road development is already heavily disturbed, it is possible that ground disturbances associated with the scheme may have a direct and negative impact on small or isolated archaeological remains that have the potential to survive beneath the current ground level with no surface expression. The impacts may vary from moderate to significant prior to the application of mitigation.

Operational Phase

The operation of the proposed park will result in an overall direct positive impact on the archaeological, architectural and cultural heritage resource, due to the recreation of a park that references the historic landscape and the retention of key elements such as the preservation of the site of Downshire House (WI005-018), original walling and bastion landscape feature and the reinstallation of the central avenue.

The axis between Saint Mary's Church and the landscape bastion will once again be in use and publicly accessible.

Cumulative Impacts

A permitted (phase 1) residential and park development (WCC.201146), located to the immediate east of the proposed development has been considered within the baseline of this assessment, due to the archaeological excavations that have taken place there. The development is currently under construction, but has resulted in (now mitigated) impacts upon archaeological features and areas that will also be impacted by the proposed development (Downshire House (WI005-018) and geometric gardens and Ringfort WI005-130)

Mitigation Measures

All construction works within the park will be monitored, including any 'no-dig' works across the site of Downshire House (WI005-018). The site of the ornamental lake (WI005-016) and the extent of structures associated with the main house will be cordoned off to prevent inadvertent impacts on buried remains.

All ground disturbances associated with the construction of the park (tree boxes, footpaths, services, car park etc) will be subject to archaeological monitoring under licence from the National Monuments Service of the DoHLGH. As it is likely that garden features associated with the geometric landscape will be exposed, a strategy to record and excavate same (or preserve in-situ) will be developed as part of the excavation licence and in consultation with the DoHLGH. If any features of archaeological potential that predate the gardens are discovered during the course of the works further archaeological mitigation and consultation may be required, such as preservation in-situ or by record. Any further mitigation in relation to earlier archaeological features will require specific approval from the National Monuments Service of the DoHLGH.

All built elements that relate to the former gardens, which will be retained as part of the park (bastion, walled garden area, boundary walls) will be repaired/reconstructed in accordance with advice and a methodology provided by a conservation specialist/ contractor. These works will also be archaeologically monitored and full photographic records of the structures will be made in advance of works commencing.

It is acknowledged that preservation in-situ is the preferred manner in which to conserve the archaeological resource., It was not possible to avoid direct impacts on AA1 and AA6-9 due to design and density requirements. As such, all the identified archaeological remains within AA1 and AA6-9 will be preserved by record (archaeological excavation) prior to the commencement of construction. This will be carried out under licence to the National Monuments Service of the DoHLGH. Full resolution will be provided to allow for the preservation by record of the archaeological remains.

A written and photographic record will be made of the section of demesne wall to be impacted by the construction of the road. This will be carried out by a suitably qualified professional and the removal of the wall will be subject to archaeological monitoring.

The removal of any remaining topsoil associated with the road development will be subject to archaeological monitoring. This will be carried out under licence to the DoHLGH. If any additional archaeological remains are identified, further mitigation may be required, such as preservation in-situ or by record. Any additional mitigation arising from this exercise will be subject to the agreement of the National Monuments Service of the DoHLGH.

As part of the overall presentation of the park and to ensure its heritage is fully incorporated as a landscape narrative, a series of information panels relating to the landscape and archaeological/historic context will be erected in the park. These will include information on the history of the area, archaeological discoveries and illustrations presenting how aspects of the landscape may have appeared during the 17th century.

An archaeological management plan will be compiled, in consultation with the local authority and the National Monuments Service of the DoHLGH, to inform the ongoing use, maintenance and any future development of the park. This will ensure that the archaeological resource is considered and activity managed as part of the landscape into the future, including the preservation of the site of Downshire House (WI005-018).

11. TRAFFIC & TRANSPORTATION

11.1 Introduction

The chapter describes the transportation impacts of the proposed development and further information is also available within the Traffic and Transportation Assessment (TTA) submitted with this planning proposal.

11.2 Methodology and Receiving Environment

This assessment is being carried out in accordance with the following guidance and established best practice:

- Environmental Protection Agency (EPA) Guidelines on the information to be contained in the EIAR;
- Transport Infrastructure Ireland (TII) Traffic and Transportation Assessment Guidelines.

Reference has also been made to the Wicklow County Development Plan 2022 – 2028.

The approach to the study accords with policy and guidance at EU, National and Local Level. Accordingly, the adopted methodology responds to best practices, current and emerging guidance, exemplified by a series of publications, all of which advocate this method of analysis. Key publications consulted included:

- 'Traffic and Transport Assessment Guidelines' (May 2014) National Road Authority;
- 'Traffic Management Guidelines' Dublin Transportation Office & Department of the Environment and Local Government (May 2003);
- 'Guidelines for Traffic Impact Assessments', The Institution of Highways and Transportation (1994);

The methodology incorporated a number of key inter-related stages, including;

- Traffic Counts: Junction traffic counts were undertaken and analysed with the objective of establishing local traffic characteristics in the immediate area of the proposed residential development.
- Trip Generation: A trip generation exercise has been carried out to establish the potential level of vehicle trips generated by the proposed residential development.
- Trip Distribution: Based upon both the existing traffic characteristics and the network layout in addition to the spatial / land use configuration and density of the urban structure across the catchments area of the development, a distribution exercise has been undertaken to assign site generated vehicle trips across the local road network.
- Network Analysis: Further to quantifying the predicted impact of vehicle movements across the local road network for the adopted optimum site access strategy, more detailed computer simulations have been undertaken to assess the operational performance of key junctions in the post development 2026, 2031 and 2041 development scenarios.

Access into Blessington from the north (Dublin) and the south (Baltinglass and south-west Wicklow) is gained via the N81 national secondary road. The N81 is a single carriageway road, passing directly

through the Main Street and the town centre. The N81 national road is subject to a speed limit of 60 km/h on approach to Blessington. As the road passes through the town centre, the speed limit is reduced to 50 km/h. The R410 Naas Road enters Blessington from the northwest, meeting the N81 Main Street south of the town centre. In the vicinity of the town, the R410 single carriageway road is subject to a speed limit of 50 km/h. The Poulaphouca Reservoir along with the Dublin and Wicklow Mountains restrict transportation connections to the east of Blessington. Regions routes R759, R758 and R756 facilitate linkages via the Sally Gap and Wicklow Gap.

11.3 Impact Assessment and Mitigation Measures

Once completed, the Blessington Inner Relief Road is proposed to remove significant quantities of through traffic and Nass bound traffic from the N81 Main Street, through Blessington Town Centre. The newly built Link Road connects the Inner Relief Road to the town centre and N81 Main Street.

The likely impact on the transport network during the construction phase will be low in nature. The number of staff on site will fluctuate over the implementation of the subject scheme. Likely deliveries to the site will arrive at a steady rate during the course of the day, the majority of which will be lorries that will be brought onto the site over the excavation period of the construction stage of the development.

Once in operation, the proposed development is expected to establish permanent travel patterns and trip generation onto the surrounding road network. The following key junctions were assessed in terms of percentage impact resulting from the implementation of the proposed development:

Junction 1 – Inner Relief Road / Link Road Roundabout;

- The ARCADY results indicate that the Inner Relief Road / Link Road junction will operate within capacity for the 2026 "Do-Something" AM peak hour with a maximum Ratio Flow to Capacity (RFC) value of 0.36 and a corresponding queue of 0.6 Passenger Car Units (pcus) being recorded. For the corresponding PM peak hour, a maximum RFC value of 0.25 will occur with a corresponding queue of 0.4 pcus
- For the 2041 Future Horizon Year "Do-Something" scenario the ARCADY results indicate that the Inner Relief Road / Link Road roundabout junction will operate within capacity for the 2041 "Do-Something" AM peak hour with a maximum RFC value of 0.41 and a corresponding queue of 0.7 pcus being recorded. For the 2041 "Do-Minimum" PM peak hour a maximum RFC value of 0.28 occurs with a corresponding queue of 0.4 pcus

Junction 2 – N81 Main Street / Oak Drive / Maxol Petrol Station Access;

- The PICADY results (Table 12-9) indicate that the N81 Main Street / Oak Drive priority controlled junction will operate within capacity for the 2026 "Do-Something" AM peak hour with a maximum Ratio Flow to Capacity (RFC) value of 0.38 and a corresponding queue of 0.7 Passenger Car Units (pcus) being recorded. For the corresponding PM peak hour, a maximum RFC value of 0.28 will occur with a corresponding queue of 0.5 pcus.
- For the 2041 Future Horizon Year "Do-Something" scenario the PICADY results indicate that the N81 Main Street / Oak Drive priority controlled junction will operate within capacity for the 2041 "DoSomething" AM peak hour with a maximum RFC value of 0.45 and a corresponding queue of

0.8 pcus being recorded. For the 2041 "Do-Something" PM peak hour a maximum RFC value of 0.34 occurs with a corresponding queue of 0.7 pcus

Junction 3 – Inner Relief Road / Oak Drive Roundabout.

- The ARCADY results indicate that the Inner Relief Road / Oak Drive roundabout junction will operate within capacity for the 2026 "Do-Something" AM peak hour with a maximum Ratio Flow to Capacity (RFC) value of 0.31 and a corresponding queue of 0.5 Passenger Car Units (pcus) being recorded. For the corresponding PM peak hour, a maximum RFC value of 0.24 will occur with a corresponding queue of 0.3 pcus.
- For the 2041 Future Horizon Year "Do-Something" scenario the ARCADY results indicate that the Inner Relief Road / Oak Drive roundabout junction will operate within capacity for the 2041 "Do-Something" AM peak hour with a maximum RFC value of 0.34 and a corresponding queue of 0.6 pcus being recorded. For the 2041 "Do-Something" PM peak hour a maximum RFC value of 0.26 occurs with a corresponding queue of 0.4 pcus.

All construction activities will be governed by a Construction Traffic Management Plan (CTMP), the details of which will be agreed with the local roads authority prior to the commencement of construction activities on site. The principal objective of the CTMP is to ensure that the impacts of all building activities generated during the construction of the proposed development upon both the public (off-site) and internal (on-site) workers environments, are fully considered and proactively managed / programmed, respecting key stakeholders requirements thereby ensuring that both the public's and construction workers safety is maintained at all times, disruptions minimised and undertaken within a controlled hazard free / minimised environment.

The Construction Traffic Management Plan (CTMP) will incorporate a range of integrated control measures and associated management initiatives with the objective of mitigating the impact of the proposed developments on-site construction activities. All construction related parking will be provided on site.

It is anticipated that the generation of HGVs during the construction period will be evenly spread throughout the day and as such will not impact significantly during the peak traffic periods. Truck wheel washes will be installed at construction entrances and any specific recommendations with regard to construction traffic management made by Wicklow County Council will be adhered to.

A Framework Mobility Management Plan has been included within the Traffic and Transport Assessment prepared as part of this planning application. The Framework Mobility Management Plan (MMP) ultimately seeks to encourage sustainable travel practices for all journeys by residents and visitors traveling to and from the proposed development. It involves the incorporation of a wide range of possible "hard" and "soft" tools from which to choose from with the objective of influencing travel choices.

The completion of this inner relief road will result in a reduction in traffic travelling though Blessington town centre, making the main street a more attractive place for pedestrians and cyclists. In order to reduce the number of private vehicles to and from the development, a number of walking and cycling connection points are proposed to encourage more active travel. The majority of these are situated

along the site's western frontage, along the School Link Road. These access locations will connect to the existing pedestrian footways and segregated cycle tracks found along the School Link Road. The proposed town park includes a large number of pedestrian and cycle paths connecting to the permitted phase 1 development and Glen Ding greenway (WCC Ref: 201146). The proposed extension to the Blessington Inner Relief Road will also feature high quality pedestrian and cycle facilities on both sides of the corridor. Upgrades to the existing Inner Relief Road / Oak Drive roundabout and the provision of the N81 / Inner Relief Road roundabout will provide safe crossing facilities for both pedestrian and cyclists.

A large number of cycle parking spaces are proposed for both residents and visitors to the development to encourage reduction in private car use. A total of 167 no. cycle parking spaces are proposed within the development for the duplex units. The houses are provided with ample opportunity for the storage of bicycles in their rear gardens. The reduction of private car use is also encouraged by the site's convenient location in close proximity to a number of local amenities. The Blessing No 1 School and Blessington GAA can both be found less than 200m north of the subject site. Blessington Town Centre can be reached in approximately 5 minutes by bike.

12. MATERIAL ASSETS – WASTE

12.1 Introduction

This Chapter provides an assessment of the potential impacts of the Proposed Development on waste management services.

12.2 Methodology and Receiving Environment

All waste materials generated during the Construction and Operational Phase of the Proposed Development will be managed in accordance with the respective waste management plans.

12.3 Impact Assessment and Mitigation Measures

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

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

It is estimated that a total of 40,000m^3 of inert / non-hazardous soil and stone will be generated during the ground clearance and levelling works undertaken across the Site. An allowance of approximately 4,000m^3 has been allowed for removal offsite. The surplus inert / non-hazardous soil and stone for offsite recovery/ disposal will not be removed from the Site until properly classified, assigned a correct List of Waste (LoW) code and all appropriate tracking and disposal documentation is in place. The remaining 36,000m^3 will be re-used on-site.
A Resource Waste Management Plan (RWMP) (Enviroguide, 2023) has been prepared for the Construction Phase of the Proposed Development and will be submitted with the planning application.

It is intended, where possible, to maximise the reuse of clean/non-hazardous excavation material as landscaping or engineering fill following appropriate material testing and risk assessment to ensure the material is suitable for its proposed end use, to avoid importing raw materials. Excavated soil and stone pending reuse in the Proposed Development will be temporarily stockpiled in designated areas onsite during the Construction Phase.
Offsite removal of surplus clean soil and topsoil will be undertaken in accordance with the RWMP and relevant waste management legislation. The site management team will keep records of the removal and certification on file on site. The offsite re-use of material will be prioritised to minimise the potential loss of valuable good quality soil and subsoil to landfill as a waste. The re-use of soil offsite will be undertaken in accordance with all statutory requirements and obligations including where appropriate

re-use as by-product in accordance with Article 27. Any surplus soil not suitable for re-use as a by-product and other waste materials arising from the Construction Phase will be removed offsite by an authorised contractor and sent to the appropriately authorised (licensed/permitted) receiving waste facilities. As only authorised facilities will be used, the potential impacts at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures.
The Operational Phase of the Proposed Development will result in an increase the production of municipal waste in the region and will increase the demand on waste collectors and treatment facilities, however, as the surrounding area is highly residential in nature, waste collection is commonplace.

An Operational Waste Management Plan (OWMP) has been prepared by Enviroguide (2023) and has been submitted with this planning application. The waste strategy presented in the OWMP which sets out how waste storage and management has been designed in accordance with legal requirements, policies and good management guidelines.

Implementation of the OWMP will ensure that a high level of recycling, reuse, and recover at the Proposed Development during the Operational Phase. All materials that are considered recyclable will be segregated and separated at source to reduce costs from the waste collector and ensure maximum diversion of material from landfill. The waste strategy presented in the OWMP will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated WSA will provide sufficient room for the required receptacles in accordance with the details of this strategy.

The cumulative effects of Proposed Development on Material Assets have been assessed taking other planned, existing, and permitted developments in the surrounding area into account. All relevant planning permission applications that have been granted and developed have been taken into account. The assessment concluded that the likely cumulative impact of the Proposed Development with other developments in the area during both the Construction and Operational Phases will be neutral and not significant on waste management facilities in the area in the long-term.

Materials and waste generated during the Construction Phase will be carefully monitored by the Construction Environmental Site Manager, and / or an appointed Waste Officer, to ensure compliance with relevant local authority requirements and effective implementation of the RWMP, including maintenance of waste documentation.

Waste management during the Operational Phase will be carried out in line with council requirements and duties for municipal waste collection and disposal.

On appointment of a contractor, a detailed Construction Management Plan (CMP) will be prepared. The detailed CMP will incorporate the requirements of Best Practice Guidelines in the preparation of Waste Management Plans for Construction and Demolition Projects (DOEHLG, 2021).

The implementation of the RWMP, OWMP and CMP, in conjunction with best environmental practice and appropriate management of the Proposed Development, will ensure that there are no significant adverse effects to waste management as a result of the Proposed Development.

13. MATERIAL ASSETS – UTILITIES

13.1 Introduction

This chapter describes the material assets in the form of utilities that could potentially be impacted by the Proposed Project in the vicinity of the subject site. The purpose of this chapter is to assess the impacts of the proposed utilities on the existing utility network which includes the following infrastructure:

- Water Supply;
- Foul Water Drainage;
- Surface Water Drainage;
- Telecommunications ;
- Natural Gas, and;
- Electricity Supply.

13.2 Methodology and Receiving Environment

A desktop study was carried out in relation to the material assets associated with the proposed development and their capacities. Projections of the resources were made for the construction and operational phase of the development. The impacts are estimated in terms of the duration of the works and their significance in relation to the site context.

An analysis of the predicted impacts of the proposed development on the services and utilities during and after the construction phase, as per Annex IV of Directive 2014/52/EU, EPA Guidance notes (2017) and Appendix C of the IGI EIS Preparation Guidelines (IGI 2013).

13.3 Impact Assessment and Mitigation Measures

The lands comprising the proposed development are in the ownership of the applicant. There are no known rights of way across the proposed development site. The office of Public Works (OPW) retain right of access for maintenance purposes along the Deerpark Stream. Potential impacts that may arise during the construction phase include:

- Contamination of surface water runoff due to construction activities.
- Improper discharge of foul drainage from contractor's compound.
- Cross contamination of potable water supply to construction compound.
- Damage to existing underground and over-ground infrastructure and possible contamination of the existing systems with construction related materials.
- Diversion of existing ESB lines may lead to loss of connectivity to and / or interruption of supply from the electrical grid.
- Potential loss of connection and/or interruption to the Gas Networks Ireland; and
- Potential loss of connection and/or interruption to the telecommunications infrastructure while carrying out works to provide service connections.

Without the consideration of mitigation measures the construction phase of the proposed development will likely have a neutral, short-term, moderate impact.

Potential operational phase impacts on the water infrastructure are noted below:

- Increased impermeable surface area will reduce local ground water recharge.
- Accidental hydrocarbon leaks and subsequent discharge into piped surface water drainage network (e.g. along roads and in driveway areas).
- Increased maximum discharge to foul drainage network (Maximum Daily Foul Discharge Volume = 147.2m^3).
- Increased potable water consumption (Average Day / Peak Week Demand = 133.7m^3/167.1m^3).
- Contamination of surface water runoff from foul sewer leaks.

Demand from the proposed development during the operational phase is not predicted to impact on the existing power, gas and telecoms network.

Without the consideration of mitigation measures the operational phase of the proposed development will likely have a neutral, permanent, slight impact.

From the perspective of the end user of the networks the risks to human health include:

- Contamination of potable water supply.
- Gas leaks or explosions. The installation of services is tightly monitored and controlled by Gas Networks Ireland to ensure the protection of human health. Therefore, the risk of effect on human health is not considered significant.
- Loss of supply of utilities. This is a managed process that is the responsibility of the individual utility supplier and emergency plans will be in place. The effect is therefore considered brief and not significant.

The proposed surface water drainage infrastructure has been designed in accordance with the relevant guidelines. Any other future development in the vicinity of the site would have to be similarly designed in relation to permitted surface water discharge, surface water attenuation and SuDS, therefore, no potential cumulative impacts are anticipated in relation to surface water drainage and flooding.

No potential cumulative impacts are anticipated in relation to wastewater as Irish Water have advised that provision of a wastewater connection is feasible. No potential cumulative impacts are anticipated in relation to water supply as Irish Water have advised that provision of a water connection is feasible.

Without the consideration of mitigation measures the construction phase of the proposed development will likely have a neutral, short-term, slight cumulative impact.

Without the consideration of mitigation measures the operational phase of the proposed development will likely have a neutral, permanent, imperceptible cumulative impact.

Mitigation measures proposed in relation to the drainage and water infrastructure include the following:

- A site-specific Construction and Environmental Management Plan (CEMP) will be developed and implemented during the construction phase. Site inductions will include reference to the procedures and best practice as outlined in the CEMP.
- Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate.
- The construction compound will include adequate staff welfare facilities including foul drainage and potable water supply. Foul drainage discharge from the construction compound will be tinkered off site to a licensed facility until a connection to the public foul drainage network has been established.
- The construction compound's potable water supply shall be located where it is protected from contamination by any construction activities or materials.

Relocation of existing ESB infrastructure will be fully coordinated with ESB Networks to ensure interruption to the existing power network is minimized (e.g. agreeing power outage to facilitate relocation of cables). Ducting and / or poles along proposed relocated routes (to be agreed with ESB) will be constructed and ready for rerouting of cables in advance of decommissioning of existing medium and high voltage power lines to minimize outage durations.

Similarly, relocation of overhead telecommunication lines running through the site will be coordinated with Eir to minimize interruption and ensure that all works are carried in a safe manner. As there are no gas networks running through the site relocation will not be necessary.

All new foul drainage pipes will be pressure tested and will be subject to an internal CCTV survey in order to identify any possible defects prior to being made operational.

No additional mitigation measures are proposed in relation to water supply, however water conservation measures such as dual flush water cisterns and low flow taps will be included in the design.

On completion of the construction phase no further mitigation measures are proposed in relation to the electrical, gas and telecommunications infrastructure.

As surface water drainage, foul water drainage and watermain design has been carried out in accordance with the relevant guidelines, there are no predicted residual impacts on the drainage and water supply arising from the operational phase.

14. MATERIAL ASSETS – MAJOR ACCIDENTS AND DISASTER

14.1 Introduction

Risk is one of the most important elements to be considered as part of a development. It is critical that any project is screened against potential risks which it might encounter and/or impose on the nearby environment during its construction and operational phase. This Chapter of the EIAR sets out the assessment of the vulnerability of the Proposed Development to risks of major accidents and/or disasters. This Chapter examines the potential for the Proposed Development to impact upon air quality and climate within the vicinity of the Proposed Development Site. This Chapter also describes and assesses the impact of the Proposed Development on local climate and on global climate in a wider context.

14.2 Methodology and Receiving Environment

In order to understand the potential consequences and predicted impacts of any major accident or disaster due to the Proposed Development and the vulnerability of the project, a desk study was undertaken. The assessment reviewed:

- The vulnerability of the project to major accidents or disasters; and
- The potential for the project to cause risks to human health, cultural heritage and the environment, as a result of that identified vulnerability.

A methodology has been used including the following assessment:

- Phase 1: Assessment - The Department of Defence (DOD) Consolidated List of National Hazards was used to identify a preliminary list of potential major accident and disasters. Receptors covered by legislation were not included within the assessment e.g., construction workers.
- Phase 2: Screening - The list was screened and major events such as volcanoes were not included given the unlikely event of one occurring. Elements already addressed as a key part of the design e.g., risks of building collapse, are not repeated.
- Phase 3: Mitigation and Evaluation - In the event that mitigation measures included did not mitigate against the risk, then, the potential impacts on receptors are identified in the relevant chapter.

14.3 Impact Assessment and Mitigation Measures

The risk assessment conducted for the Proposed Development concludes that the vulnerability of the Proposed Development to major accidents and/or disasters is not considered to result in likely significant effects; and the potential for the project to cause risks to human health, cultural heritage, and the environment, is not considered to result in likely significant effects.

15. SUMMARY OF INTERACTION AND CUMULATIVE EFFECTS

15.1 Introduction

This chapter of the EIAR analyses the Interrelationships and cumulative effects and main interactions between different aspects of the environment likely to be significantly affected by the Proposed Development.

All environmental factors are interlinked to a degree such that interrelationships exist on numerous levels. Interactions within the study area can be one-way interactions, two-way interactions and multiple-phase interactions which can be influenced by the proposed development.

15.2 Methodology and Receiving Environment

The overall objective of this assessment is to identify, through a review of these issues, whether additional mitigation is required that would not otherwise have been identified in the individual study areas for these interacting or cumulative effects. Interactions of the EIA topic areas are displayed in a matrix table which identifies potential interactions which are likely to occur between the various disciplines. This table from Chapter 16 of the EIAR is shown below. Boxes with an 'X' identify the potential interacting disciplines where a relationship exists.

Table 1: Matrix to Summarise Key Inter-relationships.

Key Environmental Interaction Matrix	Population and Human Health	Biodiversity	Land, Soil and Geology	Water	Air and Climate	Noise and Vibration	Landscape and Visual Impact	Cultural Heritage, including Archaeology	Material Assets – Transportation & Traffic	Material Assets – Waste	Material Assets – Utilities	Major Accidents and Disasters
Population and Human Health		X	X	X	X	X	X	X	X	X		
Biodiversity	X		X	X	X	X	X					
Land, Soil and Geology	X	X		X				X		X		
Water	X	X	X					X	X		X	
Air and Climate	X	X							X		X	
Noise and Vibration	X	X							X			
Landscape and Visual Impact	X	X						X				
Cultural Heritage, including Archaeology	X		X				X					
Material Assets – Transportation and Traffic	X			X	X	X				X		
Material Assets – Waste	X		X						X			
Material Assets – Utilities				X		X						
Major Accidents and Disasters												

15.3 Impact Assessment and Mitigation Measures

Mitigation measures have been proposed to avoid, remedy or reduce identified impacts. This assessment of interactions arising concluded that the proposed development will not result in any significant synergistic interactions or cumulative adverse impacts on the environment. In all instances, mitigation measures have been proposed to avoid, remedy or reduce identified impacts. Mitigation measures are proposed and outlined within individual EIAR chapters to ensure that any potential adverse impacts that may arise as a result of the proposed development are minimised/neutralised.

15.4 Cumulative Effects

The assessment of cumulative impacts considers the total impact associated with the Proposed Project when combined with other past, present and reasonably foreseeable future developments. An examination of the potential for other projects to contribute cumulatively to the impacts from this Proposed Project was undertaken during the preparation of this EIAR. No likely significant cumulative effects have been identified with regards to the Proposed Development.

16. SUMMARY OF MITIGATION MEASURES

This chapter presents a summary of the key mitigation measures identified within Chapters 4 to 15 of the Environmental Impact Assessment Report (EIAR). Mitigation describes the measures proposed in order to avoid, reduce and where practicable remedy significant adverse effects. It is also a means by which design decisions for the Proposed Project are modified to avoid, reduce or remedy the adverse environmental effects that are identified. Mitigation measures have been incorporated into the design of the Proposed Project and will be applied during the construction and operation of the Proposed Project. The mitigation measures for both the construction and operational phases are detailed as appropriate. Monitoring will take place after the consent is granted for the Proposed Development to provide assurance that aspects of the design, operation and management are functioning as intended and therefore not giving rise to significant effects

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