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GREENFIELD LRD

VOLUME I | EIAR

Non Technical Summary

Murnane & O'Shea Ltd.
BUILDING CONTRACTORS

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CHAPTER 1 | Introduction

1.1 Background Context

This Environmental Impact Assessment Report (EIAR) has been prepared on behalf of Murnane & O'Shea Limited, to assess the environmental effects of a proposed residential development at Greenfield, Ballincollig, Cork.

The EIAR has been completed in accordance with Directive 2011/92/EU (as amended by 2014/52/EU) and relevant Irish legislation as well as in conformity with guidance in the European Commission's 'Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report' 2017 and guidance in the 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' 2022 (Environmental Protection Agency).

The proposed development consists of the demolition of an existing dwelling house and farmyard with associated agricultural buildings and the construction of a mixed-use residential development of 544 no. residential units consisting of 232 no. dwelling houses, 312 no. apartment/duplex units, a two storey creche facility, commercial/retail unit and all ancillary site development works. A full description of the proposed development is provided in Chapter 2 of this EIAR.

1.2 The Applicant

The Murnane & O'Shea Group (MOS) was founded in 1958 and is one of Ireland's leading building contractors. MOS have a proven track record and played a leading role in the provision of new of housing, particularly in the Cork Metropolitan Area having delivered residential developments which include Crawford Woods and Springmount Woods (Glanmire), Clarendon Brook (Douglas), Ard Na Ri, (Banduff), Crann Darach (Montenotte) Cork and the North West Regeneration in Knocknaheeny amongst a wide variety of residential schemes. MOS are currently delivering the 'Elmbury' and 'Heathfield' residential developments in Carrigtwohill and Ballincollig and are committed to the continued delivery of residential accommodation at sustainable locations, positively contributing to the realisation of population and housing growth targets of the Cork Metropolitan Area into the future.

1.3 Purpose and Background of EIA Process

EIA requirements are now governed by Directive 2014/52/EU, which amends Directive 2011/92/EU ("the EIA Directive"). The primary function of the EIA Directive is to ensure that projects that are likely to have significant effects on the environment are subjected to an assessment of their likely impacts.

Ireland's obligations under the EIA Directive have been transposed into Irish law and, in particular, the planning consent process through the provisions of Part X of the Planning and Development Act 2000, as amended, and the Planning and Development Regulations, 2001, as amended.

This EIAR has been prepared in accordance with the relevant provisions of the EIA Directive, the Planning and Development Acts and Planning and Development Regulations. In addition, the EIAR conforms to the guidance contained in the relevant EU and Irish guidance in respect of the preparation of an EIAR.

The objective of the EIA Directive is to ensure a high level of protection of the environment and human health, through the establishment of minimum requirements for EIA, prior to development consent being given, of developments that are likely to have significant effects on the environment.

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The EPA 2022 Guidelines list the following fundamental principles to be followed when preparing an EIAR:

- Anticipating, avoiding and reducing significant effects.
- Assessing and mitigating effects,
- Maintaining objectivity.
- Ensuring clarity and quality.
- Providing relevant information to decision makers and
- Facilitating better consultation.

1.4 EIA Methodology

As per Article 5(1) of the 2014 Directive, an EIAR should provide the following information:

- Description of Project.
- Description of Baseline Scenario.
- Description of Likely Significant Effects.
- Description of Avoidance / Mitigation Measures.
- Description of Reasonable Alternatives (and rationale for chosen option) and
- A Non-Technical Summary.

Annex IV of the Directive sets out a more detailed outline of the information required in an EIAR. The subject EIAR has been prepared in full accordance with these stated requirements of Annex IV.

The EIA process can be broadly described as containing the following steps.

- EIA Screening.
- EIA Scoping.
- Preparation of an EIAR which informs planning consent process.

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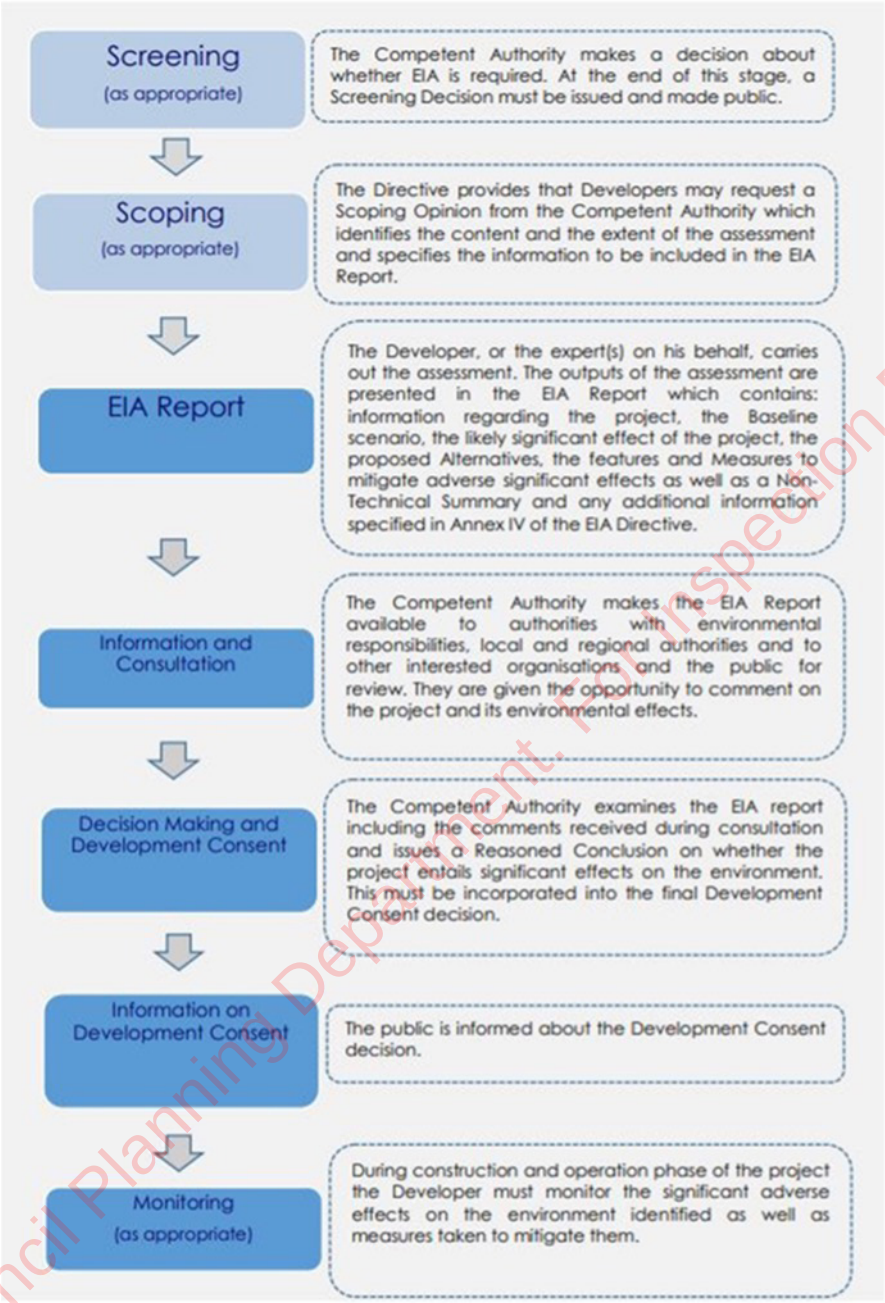

Figure 1.1 EIA Process (Source: Page 12 of Preparation Of Guidance Documents For The Implementation Of EIA Directive (Directive 2011/92/EU as amended by 2014/52/EU).

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1.5 EIA Screening

Screening is the term used to describe the process for determining whether a proposed development requires an EIA by reference to mandatory legislative threshold requirements or by reference to the type and scale of the proposed development and the significance or the environmental sensitivity of the receiving baseline environment.

Article 93 and Schedule 5 of the Planning and Development Regulations, 2001 sets out the classes of development for which a planning application must be accompanied by an environmental impact assessment report (EIAR).

Part 1 and Part 2 Schedule 5 of the Planning and Development Regulations, 2001 prescribes the categories of, and thresholds for, prescribed development requiring EIA.

The subject proposal does not come under any of the prescribed development contained in Part 1 of Schedule 5.

Paragraph 10(b) of Part 2 of Schedule 5, which refers to Infrastructure Projects refers to the thresholds where a Mandatory EIAR is required.

> *"b) (i) Construction of more than 500 dwellings*
>
> *(ii) Construction of a car-park providing more than 400 spaces, other than a car-park provided as part of, and incidental to the primary purpose of, a development.*
>
> *(iii) Construction of a shopping centre with a gross floor space exceeding 10,000 square metres.*
>
> *(iv) Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere.*
>
> *(In this paragraph, "business district" means a district within a city or town in which the predominant land use is retail or commercial use.)"*

As the proposed development comprises the construction of 544 no. residential units, an EIAR is required as prescribed by Classes 10(b)(i) of the Regulations.

1.6 EIA Scoping

EIA Scoping is the process of determining the content and extent of the matters which should be considered in the environmental information contained in an EIAR.

In determining the extent and content of this EIAR, the authors have carefully considered the applicable EU and Irish legislative requirements, relevant EU and Irish guidance and pre-planning consultation meetings held with Cork City Council in accordance with Sections 247 and Section 32B of the Planning and Development Act 2000 (as amended) in December 2024 and May 2025. The recorded minutes of the 'Stage 1' Section 247 and 'Stage 2' Section 32 LRD meetings are included as Appendix 1-1, with the LRD Meeting Opinion issued by Cork City Council on 28th May 2025 contained in Appendix 1-2 of this EIAR.

A series of meetings have taken place with the technical staff of Cork City Council which assisted in the preparation of this EIAR and the planning application.

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Scoping also included notifying the following prescribed bodies of the extent of the proposed development and that an EIAR regarding same was being prepared.

1. An Taisce
2. Cork City Childcare
3. Department of Education
4. Department of Local Government, Housing and Heritage
5. Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media
6. Eirgrid
7. Environmental Protection Agency
8. Electricity Supply Board
9. Gas Networks Ireland
10. Geological Survey Ireland
11. Heritage Council
12. Inland Fisheries Ireland
13. Irish Water/Uisce Eireann
14. Minister for the Environment, Climate and Communications
15. National Monuments Service
16. National Parks and Wildlife Service
17. National Transport Authority
18. Office of Public Works
19. Teagasc
20. Transport Infrastructure Ireland
21. Health & Safety Authority
22. Department of Agriculture Food and the Marine
23. Irish Farmers Association
24. Cork County Council

The particulars sent to the above bodies are contained in Appendix 1-3 with any responses received contained in Appendix 1-4.

1.7 Structure of the EIAR

The EIAR is divided into 3 volumes:

- The main report consisting of 15 chapters as outlined in the table of contents;
- The Appendices numbered in accordance with the chapter they relate.
- A set of non-technical summaries for each relevant chapter.

Figure 3.4 of the 2022 guidelines below, shows how comparing the character of the predicted effect to the sensitivity of the receiving environment can determine the significance of the effect.

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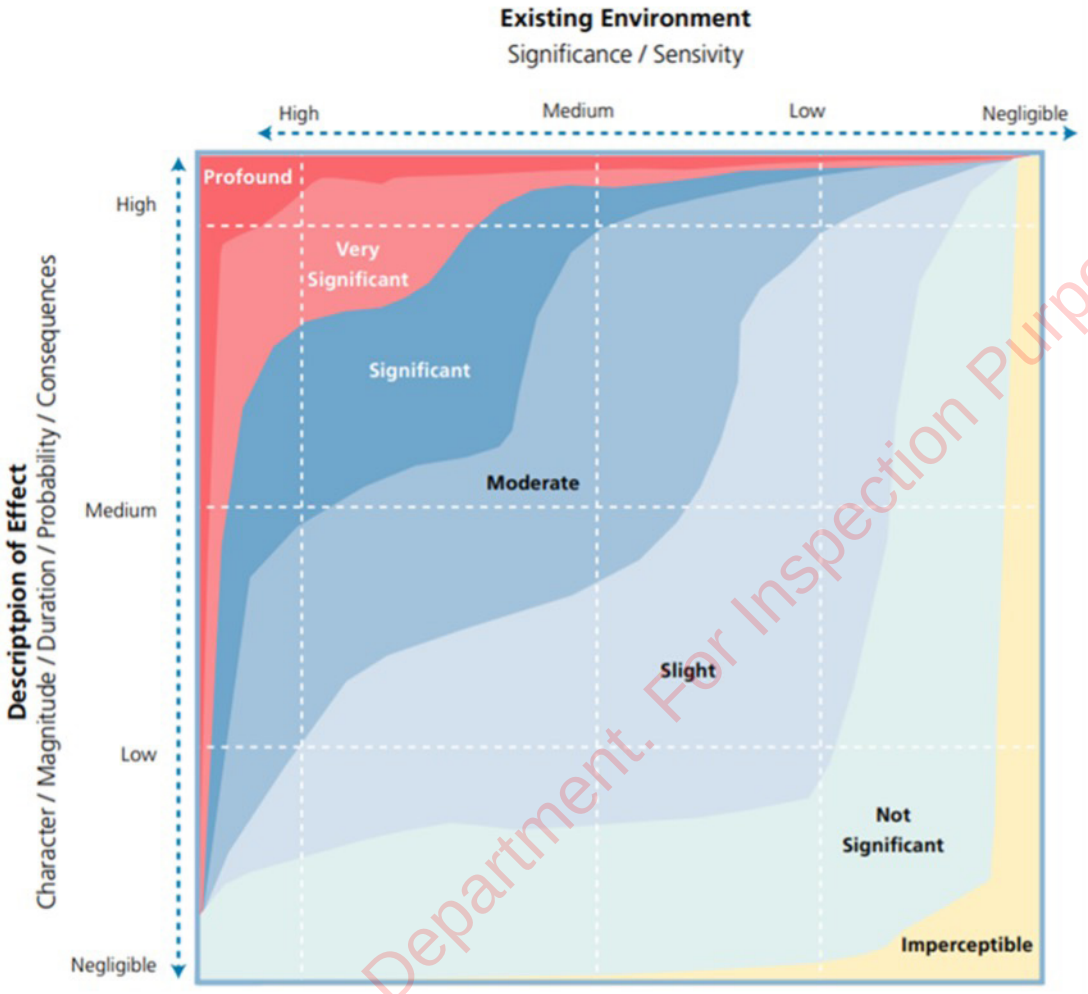

Figure 1.2 Chart Showing Typical Classifications of the Significance of Effects (Figure 3.4 of the 2022 EPA Guidelines)

1.8 EIAR Team & Qualifications

HW Planning have coordinated the subject EIAR. Environmental specialist consultants were also commissioned for the various technical chapters of the EIAR document which are mandatorily required as per the EIA Directive and Planning and Development Regulations 2018. Each environmental specialist was required to characterise the receiving baseline environment; evaluate its significance and sensitivity; predict how the receiving environment will interact with the proposed development and to work with the EIA project design team to devise measures to mitigate any adverse environmental impacts identified.

A full list of all consultants and the corresponding chapters that have been prepared is detailed below.

Planning Consultants: HW Planning

Address: 5 Joyce House, Barrack Square, Ballincollig, Cork.

Chapters Prepared: Chapter 1 – Introduction, Chapter 2 - Project Description & Alternatives Considered (in conjunction with Deady Gahan Architects), Chapter 13 - Population & Human Health, Chapter 14 - Interaction of Impacts and Chapter 15 - Summary of Mitigation & Monitoring Measures.

Personnel: Harry Walsh, (BA HONS, Master of Regional and Urban Planning, MIPI), Director at HW Planning.

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Landscape & Visual: Modelworks.
Address: The Old Courtyard, Newtownpark Ave, Blackrock, Co. Dublin, A94 YD61
Chapters Prepared: Chapter 3 – Landscape & Visual
Personnel. Richard Butler (MIPI MILI).

Traffic Consultants: Egis**.**
Address: 3 Eastgate Road, Eastgate Business Park, Little Island, Co Cork, T45KH74.
Chapters Prepared: Chapter 4 - Material Assets – Traffic & Transportation.
Personnel: Kwok Chuen Lam, Senior Traffic Engineer and Tara O'Leary, Technical Director.

Civil Engineers: DOSA Consulting Engineers
Address: Joyce House, Barrack Square, Ballincollig, Cork**.**
Chapters Prepared: Chapter 5 - Material Assets – Services, Infrastructure & Utilities,
Personnel: Liam O'Toole (BE CEng (Hons) MIEI), Director at DOSA Consulting Engineers.

Geology & Hydrology: Keohane Geological & Environmental Consultancy
Address: Ivy House, Clash, Carrigrohane, Cork.
Chapters Prepared: Chapter 6 – Land, Soils & Geology, Chapter 7 - Water (Hydrology & Hydrogeology)
Personnel: Dan Keohane (BSc Hons Geology; MSc Applied Geophysics).

Project Ecologist: Dixon Brosnan - Environmental Consultants.
Address: Lios Ri Na hAoine, 1 Redemption Road, Cork.
Chapters Prepared: Chapter 8 - Biodiversity
Personnel: Carl Dixon, (BSc) in Ecology and a Masters (MSc) in Ecological Monitoring from UCC.
Dr. Sorcha Sheehy PhD (ecology/ornithology), BSc in Applied Ecology from UCC and subsequently went on to receive a PhD in behavioural ornithology at UCC.

Built Heritage/Archaeology: Lane Purcell Archaeology
Address: 64 Father Mathew Road, Turners Cross, Cork,
Chapters Prepared: Chapter 9 - Cultural Heritage
Personnel: Avril Purcell, (MA Archaeology, NUI Cork, 1994, BA Archaeology and History, NUI Cork, 1992, Licence eligible by National Monuments Service since 1997).
Musetta O'Leary (MA Archaeology, NUI Cork, 2000, BA Archaeology and Geography, NUI Cork, 1998).

Environmental Consultant: AWN Consulting
Address: The Tecpro Building, Clonshaugh Business & Technology Park, Dublin 17
Chapters Prepared: Chapter 10 - Noise & Vibration, Chapter 11 – Air Quality, Chapter 12 - Climate
Personnel: Tanmay Gojamgunde, Environmental Consultant in the Air Quality & Climate section of AWN Consulting, He holds a MSc in Air Pollution Management and Control from the University of Birmingham and has also completed BTech in Environmental Engineering.

Ciara Nolan, Principal Environmental Consultant in the Air Quality & Climate. She holds a BSc in Energy Systems Engineering from University College Dublin and has also completed an MSc in Applied Environmental Science at UCD. She is a Member of the Institute of Air Quality Management (MIAQM) and the Institution of Environmental Sciences (MIEnvSc).

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Aoife Kelly (Senior Acoustic Consultant), BSc(Hons) in Environmental Health and a PhD in Occupational Noise. She has completed the Institute of Acoustics Diploma in Acoustics and Noise Control.

Project Architects: Deady Gahan Architects.

Address: Eastgate Village, Little Island, Co. Cork

Chapters Prepared: Chapter 2 - Project Description & Alternatives Considered (in conjunction with HW Planning)

Personnel: Eamonn Gahan, Director - Architects Registration No. 04148

1.9 Cumulative Impacts

The potential environmental effects of the proposed development have not been assessed in isolation. The potential impacts of this project have been considered in combination with other relevant permitted or proposed projects in the vicinity of the site and plans for the area, which may result in cumulative environmental impacts. The geographical boundaries for cumulative projects were developed within the wider design team having regard to the location of the Project; defined EIAR boundary; the nature of the Proposed Development works; the receiving environment; and the potential for cumulative impacts to arise relative to each individual EIAR topic chapter.

Each of the projects listed in Table 1.1 have been assessed for potential cumulative impacts. These projects were identified by using both Cork City Council and Cork County Council Planning Enquiry Systems, An Bord Pleanála's website and the Department of Housing, Local Government and Heritage's EIA Portal.

Table 1.1 Cumulative Impacts – Projects Considered

Application Reference	Applicant(s)	Date Received	Grant Date	Description	Outcome/Current Status
N/A	N/A	N/A	N/A	Luas Cork Project	Public Consultation.
N/A	N/A	N/A	N/A	Bus Connects Project	Public Consultation.
24/43308	Coleman New Homes (Blarney) Limited	7/10/2024	01/04/2025	The construction of a two-storey creche at Maglin Road, Ballincollig, Cork.	Development permitted.
23/42446	Coleman New Homes (Blarney) Limited	14/11/2023	19/0/2024	A Large-Scale Residential Development (LRD) of 162 no. residential units, landscaping and all ancillary site works Maglin Road, Ballincollig, Cork. (Cois Caislean Phase 2)	Development permitted and under construction
22/41644	MOS Homes Limited	06/12/2022	29/01/2024	Construction of 98 no. dwelling at Heathfield, Ballincollig, Cork.	Development permitted and under construction
ABP-308111-20	Stonecrest Construction Limited	8/9/2020	23/12/2020	Strategic Housing Development Application for the construction of 113 no. residential units (59 no. houses, 54 no. apartments), childcare facility and associated site works at Maglin Road, Ballincollig, Cork.	Development largely constructed. Apartment building with 54 no. units and creche to be completed.

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The potential impact on the environment of the Cork City Development Plan 2022 have also been assessed for cumulative impacts and were considered in the preparation of this EIAR.

1.10 Availability of EIAR Documentation

This EIAR will be available in printed form at the offices of Cork City Council (City Hall, Anglesea Street, Cork, T12 T997). The EIAR will also be available to view electronically at Cork City Councils online planning enquiry system and at the following website. www.GreenfieldLRD.ie

1.11 Typographical Errors

Every effort has been made to ensure that the content and findings of this EIAR is consistent and error free. However, it is acknowledged that some minor grammatical/spelling and typographical errors may occur. These typographical minor inconsistencies are unlikely to result in any material impacts on the overall findings and conclusions of the EIAR.

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CHAPTER 2 | Project Description & Alternatives Considered

2.1 Introduction

The EIA Directive requires that an EIAR should provide an overview of:

- the location, site, design, size, etc.;
- the physical characteristics of Project (including any demolition or land-use requirements);
- the characteristics of the operational phase of the Project;
- any residues, emissions, or waste expected during either the construction or the operational phase.

This chapter describes the nature, location and specific characteristics of the proposed development during construction and operational phases in accordance with the 2014 Directive.

2.2 Existing Environment/Baseline Scenario

The subject lands of 15.2 hectares in area are situated in the townland of Greenfield to the southwest of Ballincollig. The greenfield lands are bound to the northwest by the existing established urban footprint of Ballincollig, with undeveloped agricultural lands to the west and northeast. The land is accessed to the north by two entrances from Greenfields Road with a short cul-de-sac to the west and the N22 Ballincollig Bypass bounding the most southern area of the lands. The lands are situated approximately 2 kilometres southwest of the town centre of Ballincollig with the settlements of Killumney/Ovens also located to the west of the site.

The subject lands are included within an area zoned as 'ZO 2 New Residential Neighbourhoods' in the CDP, with a portion of the site to the east included within the 'ZO 15 Public Open Space' zoning objective which state respectively.

- ZO 2 - *'To provide for new residential development in tandem with the provision of the necessary social and physical infrastructure.'*
- ZO 15 – *'To protect, retain and provide for passive and active recreational uses, open space, green networks, natural areas and amenity facilities.'*

Paragraph ZO 2.2 expands further on appropriate uses at ZO 2 'New Residential Neighbourhoods' zoned lands.

> *'This zone covers primarily greenfield, undeveloped lands for new sustainable residential areas. Development in this zone, while primarily residential, must provide an appropriate mix of housing types and tenures along with the amenity, social, community and physical infrastructure required to promote compact growth, balanced communities and sustainable, liveable communities.'*

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Figure 2.1 CDP Zoning Map

The subject lands are situated in a strategically important location in the future expansion of Ballincollig. The lands serve as the western gateway to the South Ballincollig (Maglin) Urban Expansion Area (MUEA) as identified in the Core Strategy of the Cork City Development Plan 2022-2028 (CDP). An existing dwelling house, agricultural yard and sheds are located in western areas of the lands, which are accessed via the aforementioned western boundary cul de sac which also serves a number of private individual dwellings. An existing dwelling house is also situated in northern areas of the lands, however, is not included within the project red line boundary

Section 2.47 of the Core Strategy of the CDP identifies the CUEA as one of seven strategic consolidation and expansion areas in the city which will need to accommodate significant levels of housing and population growth during the lifetime of the plan. The delivery of large-scale residential development within the seven strategic consolidation and expansion areas is critical for the city to meet its ambitious growth targets within the lifetime of the CDP, but also to reach longer term targets for Cork set out in the Regional Spatial & Economic Strategy for the Southern Region (RSES) and the National Planning Framework 2040 (NPF).

Tables 2.2 and 2.3 of the CDP's Core Strategy outline the population and growth targets of the various areas of the city, in order to promote compact and sustainable growth. Ballincollig is identified to accommodate significant growth in population and housing by 2028. The CDP sets a population target of 27, 987 no. people in Ballincollig by 2028, an increase of over 54% from 2016 figures to be accommodated in an additional 3,947 units.

2.3 Project Description – Construction Phase

A Construction and Environmental Management Plan (CEMP) prepared by DOSA Consulting Engineers is included as Appendix 2-1 of this EIAR. All measures set out in this section of the EIAR, and the CEMP will be implemented during the construction phase of the project.

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It is envisaged that the construction phase of the project will be for a period of approximately 8-10 years. The project will be constructed in four distinct sequential phases comprising.

- Phase 1A – Demolition of existing dwelling house and agricultural buildings, establishment of site compound, delivery of sections of active travel paths on Greenfields Road and connections and service infrastructure and the construction of 140 no. residential units in the northwestern areas of the site.
- Phase 1B – Completion of active travel paths on Greenfields Road, the construction of the Sustainable Access
- Corridor to serve the MUEA, 150 no. residential units and creche facility in northeastern and central areas of the site.
- Phase 2A - 106 no. residential units in the southwestern area of the site.
- Phase 2B – 148 no. residential units and retail/commercial unit in the southeastern areas of the site.

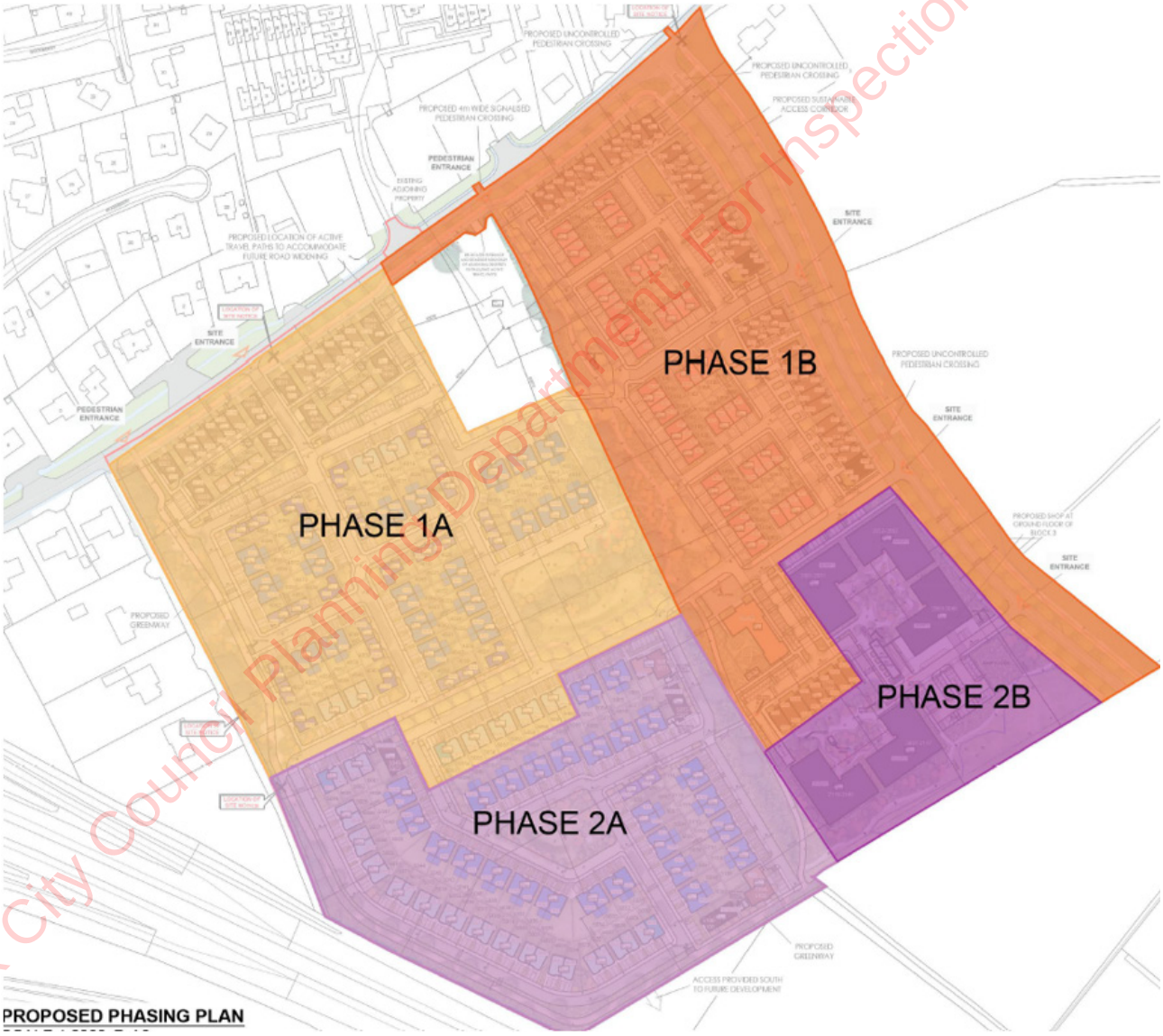

Figure 2.2 Construction Phasing Strategy

A Construction Phase Traffic Management Plan (CTMP) has been prepared and is included as Appendix 2-2 of this EIAR. The CTMP details the traffic management procedures, identification of haulage routes, predicted construction traffic levels during various phases of the development and mitigation/monitoring measures to be implemented during the construction stage of the project.

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2.4 Project Description - Operational Phase

The proposed development comprises a 10-Year Planning Permission for a Large-Scale Residential Development (LRD) at Greenfield, Ballincollig, Cork.

The proposed development consists of the demolition of an existing dwelling house and farmyard with associated agricultural buildings and the construction of a mixed-use residential development of 544 no. residential units consisting of 232 no. dwelling houses, 312 no. apartment/duplex units, a two storey creche facility, commercial/retail unit and all ancillary site development works. The proposed 232 no. dwelling houses will include 100 no. 4 bedroom detached/ semi-detached dwelling houses, 124 no. 3 bedroom semi-detached/townhouse dwelling houses and 8 no. 2 bedroom townhouse units. The proposed 312 no. apartment/duplex units will include 61 no. 3 bedroom units, 171 no. 2 bedroom units and 80 no. 1 bedroom units, to be provided in 28 no. apartment/duplex buildings ranging in height from 3-4 storeys. One of the proposed apartment buildings (Block 3) will provide the ground floor commercial/retail unit.

Vehicular access to the proposed development will be via two entrances from Greenfields Road (L2216) with separate pedestrian/cycle connections also provided from Greenfields Road. Ancillary site works include the provision of bicycle parking and bin storage facilities serving the proposed apartment/duplex buildings, creche and commercial/retail unit, landscaping and servicing proposals including the upgrade of public footpaths/active travel infrastructure and water service infrastructure, 2 no. pedestrian crossings on Greenfields Road and the installation of a noise attenuation screen along the site's southern boundary.

CRECHE	128 Child - 839.4 sq m	1
SHOP/ COMMERCIAL	710.9 sq m	1

4 BEDS	100 NO. UNITS	18.5%
3 BEDS	185 NO. UNITS	34%
2 BEDS	179 NO. UNITS	32.5%
1 BEDS	80 NO. UNITS	15%
TOTAL	544 NO. UNITS	100%

UNIT TYPE SCHEDULE		
DETACHED	8 NO. UNITS	1.5%
SEMI-DETACHED	160 NO. UNITS	29.5%
TOWNHOUSE	64 NO. UNITS	12%
DUPLEX APARTMENT	164 NO. UNITS	30.0%
APARTMENT BLOCK	148 NO. UNITS	27.0%
TOTAL	544 NO. UNITS	100%

AREAS SCHEDULE	
SITE AREA	15.2 Ha
DEV. AREA	12.1 Ha
NO.UNITS	544
OPEN SPACE	15.3% Usable
DENSITY	45 Unit/Ha

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Figure 2.3 Proposed Development

The proposed development provides for the construction of the first part of the western section of the MUEA Sustainable Access Corridor (SAC). This is consistent with the strategy developed successfully by the applicants at the eastern end of the SAC, where the first section of the eastern portion of the SAC was constructed in tandem with the development of Heathfield. The route and design of the SAC provides for a new priority junction with Greenfields Road, with 2 metre wide cycle paths and footpaths on both sides of the SAC with landscape buffer zones which can accommodate future widening of the SAC, to provide for dedicated public transport lanes as required. As detailed in Chapter 4 of this EIAR (Material Assets – Traffic & Transportation) prepared by Egis, it has been concluded that the provision of a signalised junction with the MUEA SAC and Greenfield Road is not required for the traffic generated by the proposed development.

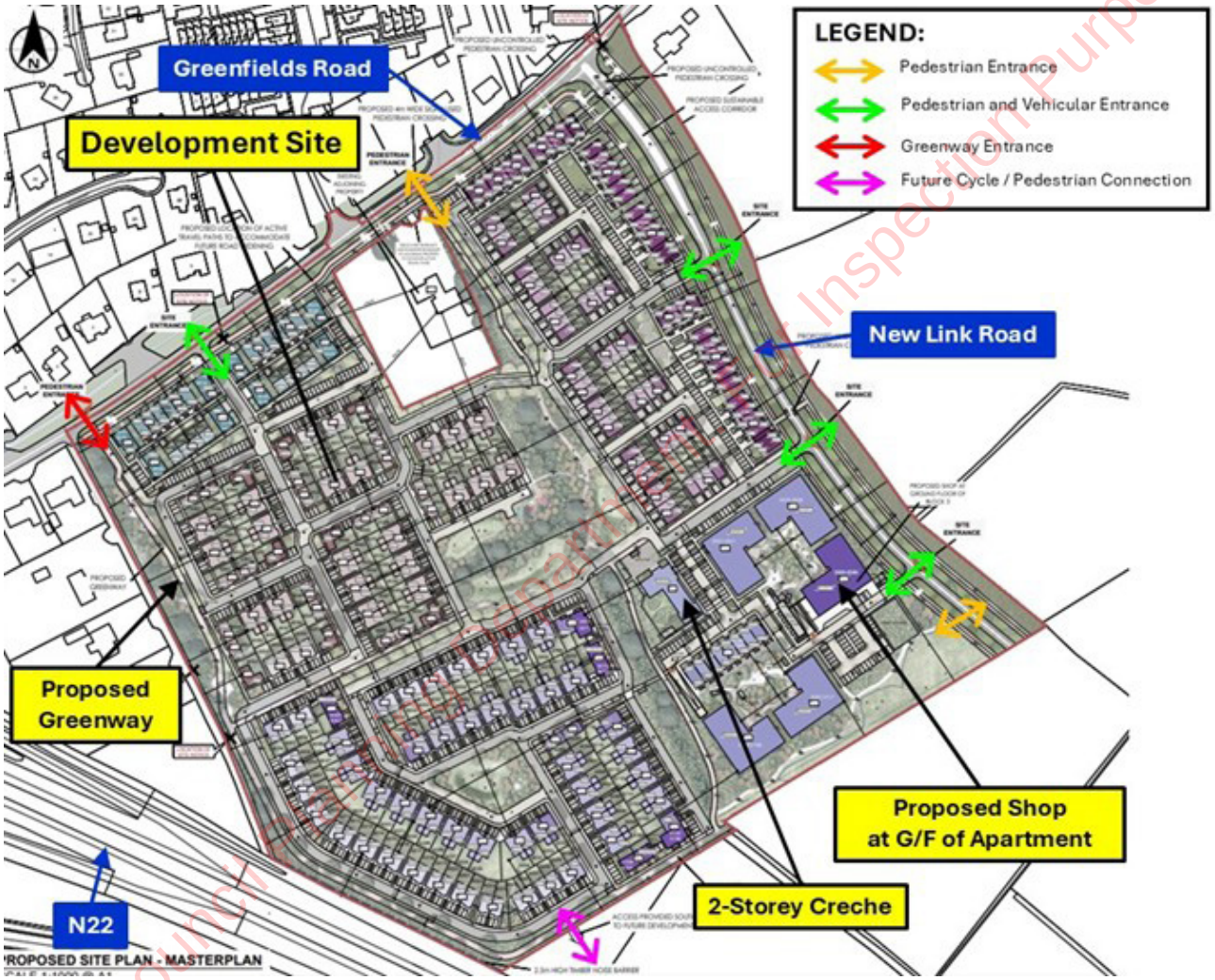

Figure 2.4 Site Access Strategy

2.5 Alternatives Considered

Article 5(1) of the Directive 2011/92/EU, as amended by Directive 2014/52/EU states that.

d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;

f) any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.

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Since the inception of the project, the developer considered several different layouts and options for the development of the subject lands. Each stage of the project required a reappraisal of the design strategy of the project and an evaluation of how each proposed layout responded to the site's context. The design rationale for the proposed development adopted several key principles which underpinned the wider development strategy for the lands including.

- That the scale of residential development is reflective of the site's existing and evolving contexts within MUEA and that delivers on the ambitious housing and population targets for Ballincollig, set out in the CDP and RSES.
- That the proposed MUEA Sustainable Access Corridor, which will provide access to the lands, is designed to accommodate a two-way cycle path and makes provision for potential future public transport corridors.
- That any layout directly responds to the site's topography, natural features and receiving environment.
- That the residential amenities of existing residents in the area is respected during both construction and operational phases of the project.
- That high quality public open spaces and communal areas are provided, which will benefit the wider community and the creation of enhanced public realm and pedestrian/cyclist upgrades, which will not only serve the proposed development, but the wider Ballincollig area.

2.6 Comparison of Environmental Impacts

5 no. Alternative Layouts were assessed through the project which are detailed in Chapter 2 of this EIAR. Tables 2.1 and 2.2 as shown provides an objective comparison analysis of the evolution of the proposed development in context of the categories outlined in Chapter 2.

Table 2.1 Comparison of Impacts - Construction Phase

Criteria	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Landscape & Visual	=	=	=	=	=
Traffic & Transportation	-	x	=	√	=
Services, Infrastructure & Utilities	=	=	=	=	=
Land, Soils & Geology	=	=	=	=	=
Water & Hydrology	=	=	=	=	=
Biodiversity	x	√	√	√	√
Noise & Vibration	=	=	x	√	√
Cultural Heritage	=	=	=	=	=
Air Quality	=	=	=	=	=
Climate	=	=	=	=	=
Population & Human Health	x	√	√	√	√

√ Where it has been considered that there has been an improvement from the previous alternative

= Where the impact is considered similar for all options

X Where a particular option is considered to have a more negative impact on a particular aspect of the environment than other alternatives.

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Table 2.2 Comparison of Impacts – Operational Phase

Criteria	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Landscape & Visual	x	√	√	√	√
Traffic & Transportation	x	√	√	√	√
Services, Infrastructure & Utilities	=	=	=	=	√
Land, Soils & Geology	=	=	=	=	=
Water & Hydrology	=	=	=	=	=
Biodiversity	x	√	√	√	√
Noise & Vibration	=	=	=	√	√
Cultural Heritage	=	=	=	=	=
Air Quality	=	=	=	=	=
Climate	=	=	=	=	=
Population & Human Health	x	√	√	√	√

√ Where it has been considered that there has been an improvement from the previous alternative

= Where the impact is considered similar for all options

X Where a particular option is considered to have a more negative impact on a particular aspect of the environment than other alternatives.

2.7 Reasons for Chosen Alternative

When all construction and operational aspects are assessed, it is objectively considered that 'Alternative E', consisting of 544 no. residential units, creche, is the most appropriate and efficient alternative layout assessed.

- Alternative E reflects the observations of Cork City Council during Section 247 and Section 32 LRD discussions, and represents a more efficient development than that previously proposed in Alternatives A-D.
- Alternative E provides for a more efficient density of residential development, reflective of the site's location and as a Gateway to the MUEA. Alternative E provides for a greater interactions and permeability with the wider area and provides a diverse housing mix accommodating a diverse new residential neighbourhood in Ballincollig.
- Alternative E provides for a more appropriate scale of development to Greenfields Road to reflect the existing scale of existing properties.
- Alternative E provides for an improvement in terms of urban design useable public open spaces, natural drainage and the promotion of active travel from previous alternatives. Alternative E also incorporates the recommendations of Cork City Council in Section 247 and Section 32 Meetings
- It is considered that the proposed layout has incrementally improved across all alternative layouts considered and will positively contribute to the future residential and economic growth of the settlement. Once operational the proposed development will result in several positive environmental and socio-economic impacts to the locality.

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CHAPTER 3 | Landscape and Visual Impact Assessment

In Chapter 3 the impacts of the proposed development on the landscape character and visual amenity of the receiving environment are assessed. The chapter should be read in conjunction with the verified photomontages contained in Chapter 3 of this EIAR.

3.1 Receiving Environment

3.1.1 The Site

The site is located within the settlement boundary of Ballincollig, at the southern edge of the existing urban area, between Greenfields Road and the N22 Ballincollig Bypass, which forms the southern boundary of the town. The site is part of the South Ballincollig (Maglin) strategic land bank, which is identified in the Cork City Development Plan 2022-2028 (CCDP) as one of seven strategic areas for consolidation and expansion of Cork City.

The site is currently in agricultural use. It is comprised of three large fields, with a cluster of farm buildings and paddocks positioned between the two western fields. The landform generally slopes down towards the south and east from a domed area in the north western field. The site boundaries are varied:

- Fronting Greenfields Road to the north, there is a stone wall along the western part of the boundary and a hedgerow on the eastern part of the boundary.
- Along the lane to the west of the site there is a is hedgerow featuring several large trees.
- The hedgerow outside the eastern site boundary is the Greenfield townland boundary and therefore has cultural heritage significance in addition to being a landscape/visual and biodiversity asset.
- Along the southern boundary there is roadside vegetation where the site abuts the N22, and historically a railway line ran just outside a part of the site boundary. The railway was removed some time ago.

In addition to the outer boundary hedgerows, there are hedgerows featuring several large trees on the internal field boundaries. The hedgerows are valuable landscape features, giving structure to the landscape, providing habitat and visual amenity.

3.1.2 Surrounding Landscape Character and Key Potential Receptors of Change

The following landscape character areas and features are the key potential receptors of change on the site.

- The suburban landscape of Greenfields Road and Woodberry to the north of the site. Greenfields Road passes along the site's northern boundary. It forms the southern edge of the western suburban area of Ballincollig. The road is lined on its north side by mostly large, detached houses. These houses face the site and are important potential receptors of change. Most of the houses are set well back from the road in large, well vegetated gardens. The combination of separation distance and vegetation screening will mitigate the impact of development on the site for these houses.
- The lane and houses to the west of the site. There are four houses across a narrow lane to the west of the site. Like the houses across Greenfields Road, the houses across the lane are sensitive receptors of change.
- The zoned lands south of Greenfields Road. The lands to the south and east of the site are of similar use and character to the site, i.e. farmland zoned for Ballincollig's urban expansion. The zoning allows for residential use to the south and east of the site inside the N22 Bypass, and a large area of public open space extending to the east of the site. The zoned open space area includes Ballincollig Castle, which lies some 400m to the east of the site.
- Ballincollig Castle. The Norman castle includes a tower built on an earth mound with a surrounding walled enclosure. The castle is in private ownership, but being located in the public open space zoned area, it has potential for development as a visitor site. There is very limited visibility of the site from the castle. The enclosing wall on the

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west side of the tower blocks views to the west from the mounded area around the tower. Views west from outside the enclosing wall are blocked or heavily filtered by a hedgerow immediately to the west of the castle.

- N22 Ballincollig Bypass. The users of the bypass are a large cohort of potential visual receptors, but they are not sensitive to change. The visibility of development from a road serving an urban area is not inappropriate; it can have benefits such as place-identification, improved legibility and improved delineation between the urban and rural landscapes.
- The peri-urban landscape south of the N22. The L2222 (Kilnaglory/Maglin) road runs parallel to the N22 some 400m to the south of the motorway, up the hillside. There is a concentration of houses along this local road. In places, the road affords views north over the N22 towards the site and the urban area of Ballincollig. If the development were visible in these views, it would be seen against the backdrop of the wider urban area and would have no significant impact on the character or quality of the view.

3.2 Visual Impact Assessment

12 no. viewpoints were selected to assess the visual impacts on the key receptors identified above. The results of the assessment were as follows:

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
1	Roundabout at western end of Greenfields Road	Medium	Low	Medium	Not significant negative	Slight neutral
2	Greenfields Road approaching site from west	Medium	Medium	Medium	Slight negative	Moderate positive
3	Greenfields Road opposite site - A	Medium	High	High	Slight negative	Moderate negative
4	Greenfields Road opposite site - B	Medium	High	High	Slight negative	Moderate negative
5	Greenfields Road approaching site from east	Medium	Medium	Medium	Slight negative	Moderate positive
6	Greenfields Road opposite NE corner of site	Medium	High	High	Slight negative	Moderate positive
7	Lane to west of site – A	Medium	Low	Low	Slight neutral	Slight neutral
8	Lane to west of site - B	Medium	Medium	Medium	Slight negative	Moderate positive
9	N22 Ballincollig Bypass	Low	Negligible	Negligible	Not significant neutral	Not significant neutral
10	Southern site boundary	Low	High	High	Slight negative	Moderate positive
11	Ballincollig Castle, base of tower	Medium-High	None	None	No effect	No effect
12	McKee Ave approaching site from south	Medium-High	Negligible	Negligible	Not significant neutral	Not significant neutral

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3.3 Landscape Impact Assessment

3.3.1 Lanscape Sensitivity

The landscape sensitivity of the receiving environment can be classified 'medium' (definition: *Areas where the landscape has certain valued elements, features or characteristics but where the character is mixed or not particularly strong, or has evidence of alteration, degradation or erosion of elements and characteristics. The landscape character is such that there is some capacity for change. These areas may be recognised in policy at local or county level and the principle management objective may be to consolidate landscape character or facilitate appropriate, necessary change*). The medium sensitivity classification is based on the following factors:

- The site is currently in agricultural use but is located within the settlement boundary of Ballincollig, inside the N22 Bypass, adjacent to the existing urban area. There is an ongoing, plan-led southern expansion of the town into the South Ballincollig/Maglin lands, which are one of seven 'strategic areas for consolidation and expansion of Cork City' identified in the CCDP.
- The site (apart from a small are in the south east corner) is zoned ZO 2 'New Residential Neighbourhoods'. The CCDP objective for these areas is to *"provide an appropriate mix of housing types and tenures along with the amenity, social, community and physical infrastructure required to promote compact growth, balanced communities and sustainable, liveable communities"*.
- While the site itself is greenfield and its immediate landscape context is part-greenfield, part-urban, in terms of landscape character its receiving environment is the urban area of Ballincollig.
- There are existing houses to the north of the site across Greenfields Road and to the west across the lane that terminates in a cul-de-sac beside the N22. The development pattern in these adjacent areas is suburban, the landscape characterised by detached houses in large, mature gardens. Residential receptors such as these houses are sensitive to landscape and visual change – although the urban location/context must be recognised.
- The hedgerows on the site are valuable landscape features locally. They give structure to the landscape, provide visual amenity and (potentially) screening, and form part of the local ecological/green infrastructure network.
- Ballincollig Castle lies 400m to the east of the site. The castle is of significant cultural heritage value, and it features prominently in views across the landscape of south Ballincollig. With the ongoing southward expansion of the town the castle's landscape context is increasingly urban. However, it is protected from being subsumed into the urban area by open space zoning to all sides.

3.3.2 Magnitude of Lanscape Change

The magnitude of landscape change that would result from the proposed development can be classified 'medium' (definition: *Change that is moderate in extent, resulting in partial loss or alteration to key elements, features or characteristics of the landscape, and/or introduction of elements that may be prominent but not necessarily substantially uncharacteristic in the context. Such development results in change to the character of the landscape*). The medium sensitivity classification is based on the following factors:

- With a site area of 15.4ha and comprising 548 no. residential units, the proposed development is of substantial scale/spatial extent. Considered at the 'local scale', it would constitute a significant expansion of the urban area – particularly as it would cross Greenfields Road (incorporating the road into the urban area) and extend to the N22 Bypass.
- However, at the 'landscape scale' (i.e. considered in the context of its wider receiving environment, the urban area of Ballincollig), the landscape change would be moderate and in keeping with an ongoing, plan-led urban expansion into the South Ballincollig/Maglin lands.
- The proposal includes a range of residential building types, including semi-detached houses and townhouses, duplex terraces and four storey apartment buildings. This would diversify the housing/building typologies in the landscape locally – but the change is in keeping with the trend of urban consolidation and densification in Ballincollig and Cork City generally.

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- The visual impact assessment shows that the magnitude of visual (and landscape) change would be highest on Greenfields Road as it approaches and passes by the site. The road, which currently runs along the edge of the urban area (locally), would be incorporated into the urban area, and the character of the road corridor would shift from suburban/rural to urban.
- Outside of its immediate environs (the Greenfields Road corridor specifically), the development's visual and landscape impacts would be relatively minor. The lane and houses adjacent to the west would experience limited change due to the responsive design, which includes retention of the boundary hedgerow and trees. Importantly, the proposed development would have negligible impact on Ballincollig Castle.

3.3.3 Significance and Quality Landscape Impact

Measuring the magnitude of change against the sensitivity of the receiving environment, the significance of the landscape impact would be 'moderate' (EPA definition: *An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends*).

This is a reasonable assessment outcome. The urban area would be expanded locally, and the housing/building typologies diversified with an associated increase in density. This would cause a shift in character towards a more urban condition, particularly along Greenfields Road, but this shift would be consistent with the existing, plan-led trend of change in south Ballincollig. The key consideration is whether the effects would be positive, neutral or negative. In this regard:

- The key landscape assets of the site – the external and internal boundary hedgerows - would largely be retained and would form the framework of the open space network, circulation network and block structure of the new neighbourhood. The new urban grain would thus reflect the historic field pattern of the site.
- The ecological and visual functions (amenity and screening) of the hedgerows would be maintained and in places enhanced, most notably on the west boundary where the hedgerow and trees would be incorporated into a densely planted open space corridor up to 15 m wide.
- Of 54 no. existing trees identified on the site (in the hedgerows), 37 no. would be retained and 17 no. removed. 778 no. new trees are proposed along the streets and greenways and in the open spaces of the new neighbourhood. There would therefore be a net increase of 761 no. trees on the site.
- A variety of SUDS features are proposed as part of the development, including rain gardens, infiltration basins, filter drains and green roofs on the apartment blocks.
- The proposed built form (the building typologies, scale and architecture) demonstrably responds to the varying conditions and sensitivities around the site:
- In response to the lane and houses to the west, traditional two storey houses are proposed, set well back (25m) from the lane behind a densely planted open space corridor and greenway. There would thus be a soft transition along this boundary.
- In contrast, along Greenfields Road, three storey duplex terraces are proposed. These are an urban housing/building typology, but of modest height. They would generate urban character along the road – appropriate to its status and function in the urban structure – without causing excessive built/visual enclosure. Street trees and hedging to the front gardens are proposed to soften the built frontage.
- Along the 'Maglin Sustainable Access Corridor' inside the east boundary, a mix of duplex terraces and four storey apartment blocks is proposed. The buildings would generate urban character and strengthen the new urban structure - with the apartments in the south east corner of the site identifying the mixed use core of the new neighbourhood. These buildings would enclose an open space that is contiguous with the large area of zoned open space extending to the east. The upper floors of the apartment and duplex buildings fronting the new road would benefit from views east over the retained Greenfield townland boundary hedgerow towards Ballincollig Castle some 450m distant.
- The varying design response to the context results in variations in character across the scheme. This variety would be reinforced by the detail design of the buildings, creating sub-neighbourhoods/character areas of distinct identity – but with a unified design theme. The verified photomontages and CGIs illustrate the high quality of design and materials proposed.

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In conclusion, while the site would be transformed and the landscape character of the receiving environment altered (towards a consolidated, urban condition), the overall landscape impact can be classified positive. The land use objective for the site would be realised and the urban area expanded in accordance with the CCDP policy for the South Ballincollig/ Maglin area. The proposed development would result in an attractive new neighbourhood that retains the historic field pattern in its urban structure, retains and enhances the site's main landscape assets (the hedgerows), and provides a mix of housing along with amenity, community and physical infrastructure.

3.4 Avoidance, remedial and Mitigation Measures

3.4.1 Operation Phase

The potential landscape impact of the proposed development has been classified 'moderate positive'.

The potential visual impacts have mostly been classified neutral or positive – apart from the impacts on two viewpoints representing the houses on the north side of Greenfields Road opposite the site (Viewpoints 3 and 4). The views from these properties are currently of a rolling pastoral landscape, with the hills south of Ballincollig forming the horizon. The new duplex buildings fronting Greenfields Road would block these views and change the character of the road to that of an urban street. The houses north of the road would thus experience a loss in visual amenity, but the change is not inappropriate and the new buildings and public realm would themselves be of high design and material quality.

Therefore, no mitigation measures for landscape or visual impacts are required.

3.4.2 Construction Phase

The negative landscape and visual impacts of construction are an unavoidable consequence of development and there is limited potential for mitigation. Site hoarding would screen ground level activity, materials stockpiles, vehicles, etc. but once the buildings grow above ground floor level they would be visible above the hoarding, as would cranes, scaffolding and construction activity on the buildings themselves. No landscape or visual-specific mitigation is recommended other than standard best practice construction site management, which should include the erection and maintenance of hoarding on the site boundaries.

The above assumes that the hedgerow and tree protection measures recommended in the Tree Survey by County Tree Care Ltd (Appendix 3-1) would be fully implemented. The retention of the hedgerows and certain trees on the site is an important part of the proposed development, and any loss of this vegetation would constitute a negative landscape impact.

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CHAPTER 4 | Material Assets – Traffic & Transportation

4.1 Background

This chapter of the Environmental Impact Assessment Report (EIAR) provides an assessment of the existing environmental setting and the likely significant impacts on the surrounding transport network, associated with the proposed residential development (Greenfields) at lands in Ballincollig, Co. Cork

4.1.1 Permitted Developments

At the time of writing, three other developments (including Stonecrest Phase 1 development, Stonecrest Phase 2 development and Heathfield Phase 4 development) in the vicinity of proposed development were obtained planning permission from the An Bord Pleanála. Those permitted developments shall be considered for this study in both the "without" and "with" development scenarios. This is because whether or not the proposed development is built, the trips generated by those permitted developments will still apply.

4.1.2 Proposed Development

The development comprises 544 residential units (comprising of 100 no. four-bedroom houses, 124 no. three-bedroom houses, 8 no. 2-bedroom houses, 61 no. three-bedroom duplex/apartment units, 171 no. two-bedroom duplex/apartment units and 80 no. one-bedroom duplex/apartment units), one 2-storey creche and one retail/commercial unit (the specific use of which is yet to be determined) at the ground floor of Block 3 of apartments.

Car Parking Provision

For residential development, it is proposed to provide 767 car parking spaces, of which 428 car parking spaces for houses, 148 car parking spaces for apartment units, 164 car parking spaces for duplex units (including G/F apartment units), 24 car parking spaces for visitor and 3 car parking spaces for GoCar. Included in the 320 car parking spaces provided for residential units with not in-curtilage parking, 19 accessible parking spaces will be provided. This is considerably below the maximum allowed parking from the standards.

For non-residential development, it is proposed to provide 15 car parking spaces for non-residential development, of which 9 car parking spaces for creche and 6 car parking spaces for the shop. Included in the 15 car parking spaces provided for non-residential development, one accessible parking space for creche and two accessible parking spaces for the shop will be provided.

The developer will also provide 67 parking spaces with functioning EV charging points from completion of the residential units with not in-curtilage parking. An additional 1 space is provided for creche and 1 space provided for the shop – total 69 EV parking spaces on site.

Bicycle Parking Provision

For the residential development, it is proposed to provide 485 bicycle parking spaces, of which 357 bicycle parking spaces for the apartment/duplex units and 128 bicycle parking spaces for visitors. Additionally, it is assumed that bicycle parking for houses will be accommodated in each rear garden space.

For the non-residential development, it is proposed to provide 28 bicycle parking spaces, inclusive of 16 bicycle parking spaces for visitor, for the proposed creche. Additionally, it is proposed to provide 16 bicycle parking spaces for the proposed shop.

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Moreover, the proposed development will provide 48 bicycle parking spaces for cyclists using the proposed greenway. In total, the proposed development will provide 577 bicycle parking spaces.

4.2 Receiving Environment

There are good existing public transport options available to commuters between Ballincollig and Cork City centre and other destinations to the east and west. The only 24-hour bus route in Ireland connects Ballincollig to Carrigaline, operating a high frequency service. The report also details the proposed active travel and public transport projects outlined in CMATS and confirms that the proposed development is ideally located to take advantage of these future proposals when they come to fruition. The proposed development provides active travel facilities throughout with walking and cycling routes, shared paths, crossing points, raised tables, material changes which all align with DMURS requirements.

Vehicle turning movement surveys were undertaken on 16th April 2024 at nine existing junctions (i.e. Junction 1 to Junction 9) and on 16th January 2025 at Junction 12 in the surrounding area, which captured all turning movements at the junctions from 07:00 to 19:00. These junctions were selected as they are considered the junctions most likely to be affected by traffic associated with the proposed development:

- Junction 1 – Northern Roundabout at Junction 2 of N22 Ballincollig Bypass;
- Junction 2 – Greenfields Road / Flynn's Road / Castle Road;
- Junction 3 – Sunningdale / Maglin Road / Castle Road;
- Junction 4 – Sunningdale / Station Road / Carriganarra Road;
- Junction 5 – Link Road / Limeworth / Carriganarra Road / Leo Murphy Link Road;
- Junction 6 – Link Road / Heathfield / Carriganarra Road;
- Junction 7 – Killumney Link East Roundabout;
- Junction 8 – Northern Roundabout at Junction 1 of Cork South Ring Road / Ballincollig Bypass;
- Junction 9 – Southern Roundabout at Junction 1 of Cork South Ring Road / Ballincollig Bypass; and
- Junction 12 – Southern Roundabout at Junction 2 of N22 Ballincollig Bypass.

It should be also noted that the future traffic flows at new junctions, including Junction 10 – Greenfields Road / New Link Road (main site access) and Junction 11 – Secondary Site Access on Greenfields Road, would be estimated based on the aforementioned traffic counts and trips generated from the proposed development.

4.3 Assessment

4.3.1 Traffic Impact During the Construction Phase

There will be minor impacts on the safety or operation of the road network as a result of the construction phase of the development. Having consideration for the mitigation measures, any impacts during the construction phase will be negligible. All construction related traffic will be outside the morning and evening peak hours and will not have a significant impact the operation of the adjoining junctions. Furthermore, they will be temporary in nature and of relatively short duration. The overall residual impact during the construction phase of the proposed development on traffic and transportation, after the implementation of mitigations measures outlined above, will be short term and not significant.

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4.3.2 Traffic Impact During the Operational Phase

Expected trip generation for the proposed residential development was estimated utilising the TRICS database and modal split for the Electoral Division of Ballincollig from 2022 Census as agreed with CCC while expected trip generation for the proposed non-residential development (i.e. creche and café) were estimated utilising the TRICS database and applying the trip reduction factor due to the "Pass-by" / "Multi-Use" trips. Expected trip generation for the proposed development was revealed to be in total 86 trips inbound and 221 trips outbound in the morning peak hour, and 171 trips inbound and 96 trips outbound in the evening peak hour.

An exercise was carried out to quantify the expected development trip generation as a proportion of existing traffic flows on the surrounding road network to determine if a detailed traffic impact assessment is required for all of the junctions included within the scoping study. The estimated trips associated with the proposed development for Junction 5 to Junction 9 inclusive represent a small proportion of existing traffic flows on the surrounding road network and less than the thresholds for traffic impact assessment stated in the Table 2.1 of TII Traffic and Transport Assessment Guidelines (i.e. 10% of the traffic flow on the existing road network and 5% in sensitive environments or where congestion exists) during the morning and evening peak hours. Thus, it is not necessary to undertake any traffic capacity assessments for Junction 5 to Junction 9 in this study.

It is acknowledged that Junction 1 to Junction 4 and Junction 12 are greater than the 5% of the traffic flow on the existing road network where some congestion exists, or the location is sensitive. Therefore, a capacity assessment on Junction 1 to Junction 4 and Junction 12 were undertaken using the TRL's analysis software: ARCADY for roundabout junction, PICADY for priority junction and OSCADY for signalised junction. Additionally, a capacity assessment on Junction 10 (proposed main access) and Junction 11 (secondary access) were undertaken as they are the access junctions on Greenfields Road.

It is anticipated, following a successful planning application, that the proposed development will be fully complete and operational in 2032. Thus, the assessment will focus on the 2032 Opening year and 2047 Design Year for Junction 1 to Junction 4, Junction 10, Junction 11 and Junction 12.

The analysis results demonstrate that Greenfields Road, Maglin Road, Castle Road, Sunningdale and Carriganarra Road will operate within the normal design capacity in the morning and evening peak hours under 2024 Baseline Year, 2032 Opening Year and 2047 Design Year.

4.3.3 2023 Opening Year

Typically, a RFC of less than 0.85 normal design threshold for priority junction/roundabout junction and a DOS of less than 0.9 normal design threshold for signalised junction are considered to indicate satisfactory performance (i.e. operating in an efficient and stable condition). A RFC of between 0.85 and 1 for priority junction/roundabout junction and a DOS of between 0.9 and 1 for signalised junction represent variable operation, and may be said to be operating adequately, if the queue and delay are deemed acceptable. RFC and DOS values in excess of 1 represent an oversaturated condition.

In 2032, the proposed development slightly increases the RFC/DOS for each junction by approximately 10%. All RFC/DOS values remain below 1 (less than its theoretical capacity) with relatively low levels of queuing and delay, and with the majority below the normal design threshold (i.e. 0.85 RFC or 0.9 DOS) for both the with and without the development. Therefore, a RFC of between 0.85 and 1 or a DOS of between 0.9 and 1 for the aforementioned junctions are still considered to be operating adequately.

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4.3.4 2047 Design Year

Under this robust and conservative assessment (i.e. without considering any emerging transport developments) in 2047, majority RFC/DOS values remain below 1 (less than its theoretical capacity) with relatively low levels of queuing and delay for both the "without" and "with" development scenarios. However, Junction 1 to Junction 4 and Junction 12 will slightly exceed the theoretical capacity of 1.0 for the "with" development scenario. It should be noted that the likely development of infrastructure (i.e. upgrading Killumney Road, construction of Eastern Link road, Western Link Road and Maglin By-Pass), the provision of public transport infrastructure (BusConnects and light rail) and the provision of the Maglin Greenway to encourage increased modal shift away from the use of the private car will result in a decrease in the traffic at the exiting junctions along Killumney Road (i.e. Greenfields Road, Castle Road, Sunningdale, etc.). After completion of these improvements, the performance of aforementioned junctions could be further improved.

The mitigation measures, future public road and transport infrastructure improvement works and the likely modal shift away from the use of the private car will all further reduce the impact that this development has on the surrounding road network.

The location of the proposed development is ideally situated to take advantage of the existing and proposed public transport and active travel options planned for the area - BusConnects and Light Rail, Maglin Greenway, cycle infrastructure, etc as detailed in the Cork City Development Plan 2022-2028 and CMATS.

4.3.5 Conclusion

In view of the above analysis, the overall residual impact during the operational phase of the proposed development on traffic and transportation, after the implementation of mitigations measures outlined above, will be long term and slight.

The study concludes that a traffic from the proposed development as described herein will not have a significant impact on existing and proposed traffic in the vicinity of the development.

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CHAPTER 5 | Material Assets: Services, Infrastructure & Utilities

5.1 Existing Stormwater Infrastructure

There is no internal stormwater piped network within the site. The main hydrological features of the area are the "Lisheens Stream" and "Maglin" networks. Both of these watercourse's flow in a westerly direction and are located to the south of the site. There are a serious of open drainage channels that connect to this network The Maglin North watercourse is joined by the Maglin South approximately 2km downstream from the subject site before discharging to the Curragheen River, which is approximately a further 2km downstream.

5.2 Existing Foul Drainage Infrastructure

There are no records or evidence indicating the presence of any constructed foul water drainage infrastructure within the site.

The nearest foul water drainage system to the site is the public network located in the Turain Glas which has been taken in charge by Uisce Eireann. It is located directly opposite the northern boundary of the proposed development

5.3 Existing Water Supply Infrastructure

From available water main records and liaison with Uisce Eireann, the following existing watermains have been identified within the vicinity of the site:

1 No. 150mm diameter watermain located in the public road - Greenfields Road directly north of the site

5.4 Existing Flood Risk

The site of the proposed development is considered to be in Flood Zone C. There is currently no primary risk of flooding to the site in this area. There is a small section located in the south eastern corner that is in Flood Zone A/B.

5.5 Impact Assessment

The proposed development was assessed to look at the development of the site and the impact this would have on the following

- storm water drainage infrastructure
- foul water infrastructure
- water supply,
- utilities services (electricity, public lighting, broadband)

to service the proposed development.

5.6 Stormwater

The proposed development will adhere to the requirements of Cork City Council's sustainable urban drainage systems. This will allow the storm water generated on site to be released in a controlled manner even during extreme storm water events while also using SuDS techniques to improve the overall storm water quality and assist in attenuation volumes.

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5.7 Foul Sewer

The proposed schemes requirements have been assessed by Irish Water who have deemed the requirements can be adequately services by the local infrastructure. A Statement of Design Acceptance has been issued by Irish Water in relation to same.

5.8 Water Supply

The proposed schemes requirement has been assessed by Irish Water who have deemed the requirements can be adequately services by the local infrastructure. A Statement of Design Acceptance has been issued by Irish Water in relation to same

5.9 Utilities services (electricity, public lighting, broadband)

The proposed development will adhere to the requirements of the relevant service providers in order to connect to the existing infrastructure.

5.10 Flood risk

A site-specific flood risk assessment for the site has been carried out by Malachy Walsh & Partners (MWP). On the basis that the residential units are located within Flood Zone C and the portion of the site located in Flood Zone A/B would be used for amenity space or landscaping, development of the site is considered appropriate in the context of the Planning System and Flood Risk Management – Guidelines for Planning Authorities, November 2009 (PSFRM) Guidelines. and the sites current, low risk designation will be maintained following the development of the site

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CHAPTER 6 | Land, Soils & Geology

The Greenfield site is in a rural to suburban setting at the western extremity of Ballincollig, Cork. The lands are zoned for residential development in the current Cork City Development Plan. It is located on agricultural land sloping gently to the southeast. The lands are made up of several agricultural fields divided by mature hedgerows and wooden post & rail fencing. The large field on the eastern side of the site hosts higher intensity agricultural practices – application of more fertilizer and higher stocking rates. The western fields are less intensity worked and used for grazing horses. The N22 national road forms the south-western boundary of the site. The Greenfield Road runs along the northern site boundary. Agricultural lands, used for grazing, bound the site to the east and southeast. The land, soils and geology of the site were assessed based on available literature, published reports, walkover surveys and ground investigation. The overburden soils consist of a thin layer of topsoil (150 to 400mm) and glacial tills resting of limestone bedrock. The overburden tills are generally sandy with varying amounts of clay and gravel. Overburden thickness increases from approximately 1.6m at the northwest corner of the site to approximately 10.2m along the southern site boundary, and thickening to the south. The soils are fertile, so have a wide range of potential uses and are well suited to arable crops and grassland.

Figure 6.1 Overburden Geology Map

The bedrock consists of limestone rocks which have been folded during the mountain building periods to give east-west orientated valleys and hills which impose a strong influence on the landscape character of south County Cork. The bedrock consists of two limestone formations, both of which are susceptible to karstification (chemical dissolution of the limestone), which present as caves, springs, sink holes, etc. Historic maps for the site indicate a small quarry and lime kiln at the northwest corner of the site. There is no evidence remaining of these features. Bedrock is exposed at a few locations to the east of the site, such as at Ballincollig Castle.

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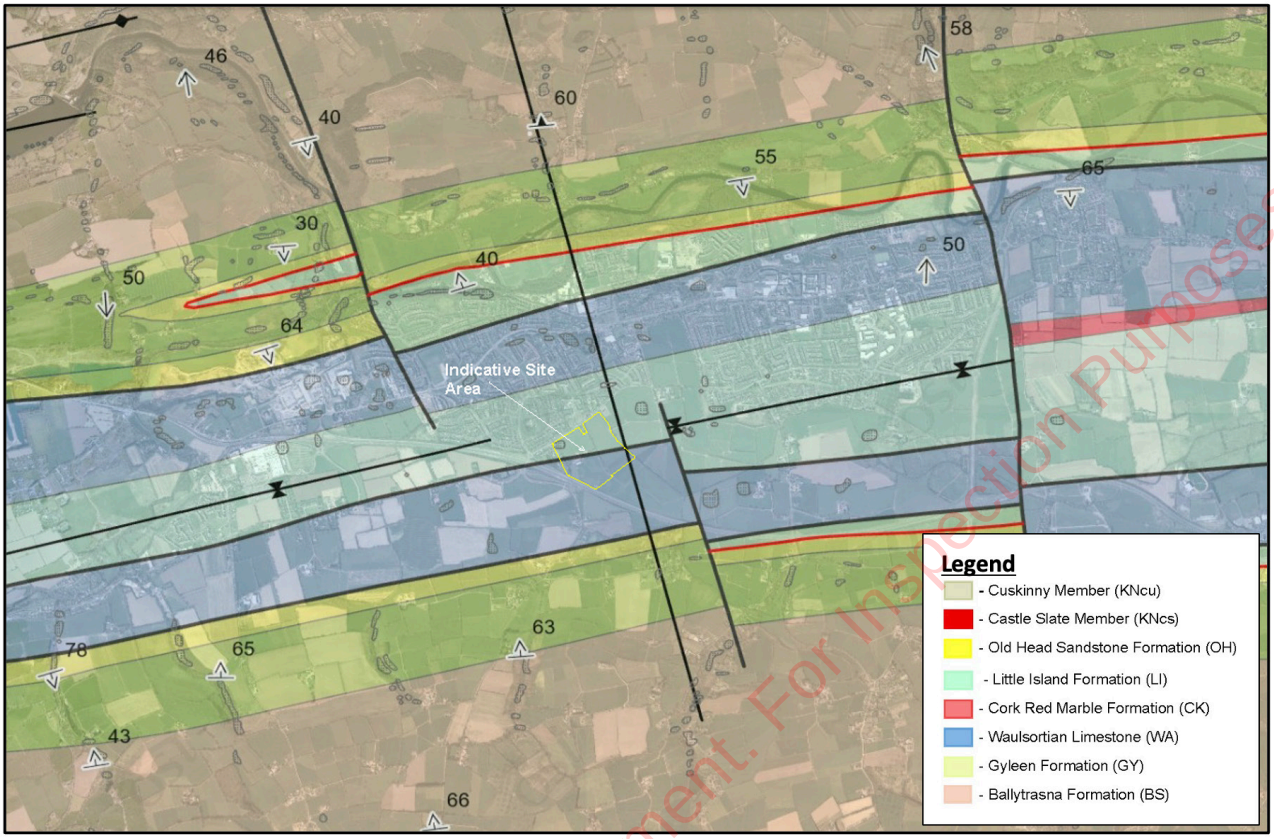

Figure 6.2 Bedrock Geology Map

There are no geological heritages sites within the development site or within its vicinity. The Ballincollig Caves, located to the east of the site, is a proposed National Heritage Area. The site has no economic potential, such as minerals or gravel deposits. There are no identified contaminated land issues associated with the site.

Overall, the importance of the site in terms of its land, soils and geology attributes is rated as Medium.

The impacts on land, soils and geology are associated with the construction phase, with earthworks required for the development, and use of quarry products in the construction of the development.

Appropriate mitigation is proposed to avoid and reduce the impacts identified. Due to the flat topography of the site, no large-scale cut and fill excavations will be required. Much of the excavated soils will be reused on site. Surplus soils will be removed off site for beneficial use to improve the agricultural potential of soil recovery sites, beneficial use in other infrastructural projects, and / or the restoration of disused quarries. These beneficial uses will be identified during the construction phase. Foundations design will take account of the geology with the use of rafts supported with end-bearing piles. Concrete, concrete products and aggregates needed for the construction will only be sourced from authorised quarries, at which appropriate environmental controls are implemented. No significant impacts on soils or geology are identified during the operational phase. The land use will be permanently changed from rural agricultural use to an urban residential neighbourhood. Amenity land use will be provided with the open green space and landscaping.

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CHAPTER 7 | Water (Hydrology & Hydrogeology)

The surface water and groundwater environments at the site were assessed using available published literature, site walkovers, ground investigations, and surface water sampling. Assessment of the aquatic environment was carried out by the project ecologist. The engineering hydrology aspects of the development, including flood studies and drainage design, were carried out by the project engineers.

The site is located in the catchment of the Lisheens Stream a first order stream and a tributary of the Maglin North River. Several man-made field boundary drains are located within the site. Most of these are dry except during prolonged heavy rainfall events. An open drain flows west along the southeastern perimeter of the site, turns to the southeast and discharges to the headwaters of the Lisheens Stream. The Lisheens Stream is a shallow wide drain with slow flows, constructed / modified in the mid-20th Century by the Office of Public Works as part of the arterial drainage scheme to improve land for agriculture and to mitigate flooding. The Lisheens Stream discharge to the Maglin North River just east of Ballincollig Castle. It flows generally in an easterly direction, joining with the Maglin South River, Curraheen River, Glasheen River and eventually the South Channel of the River Lee. The catchment of the site is shown in Figure 7-1 and local drainage is shown on Figure 7-2.

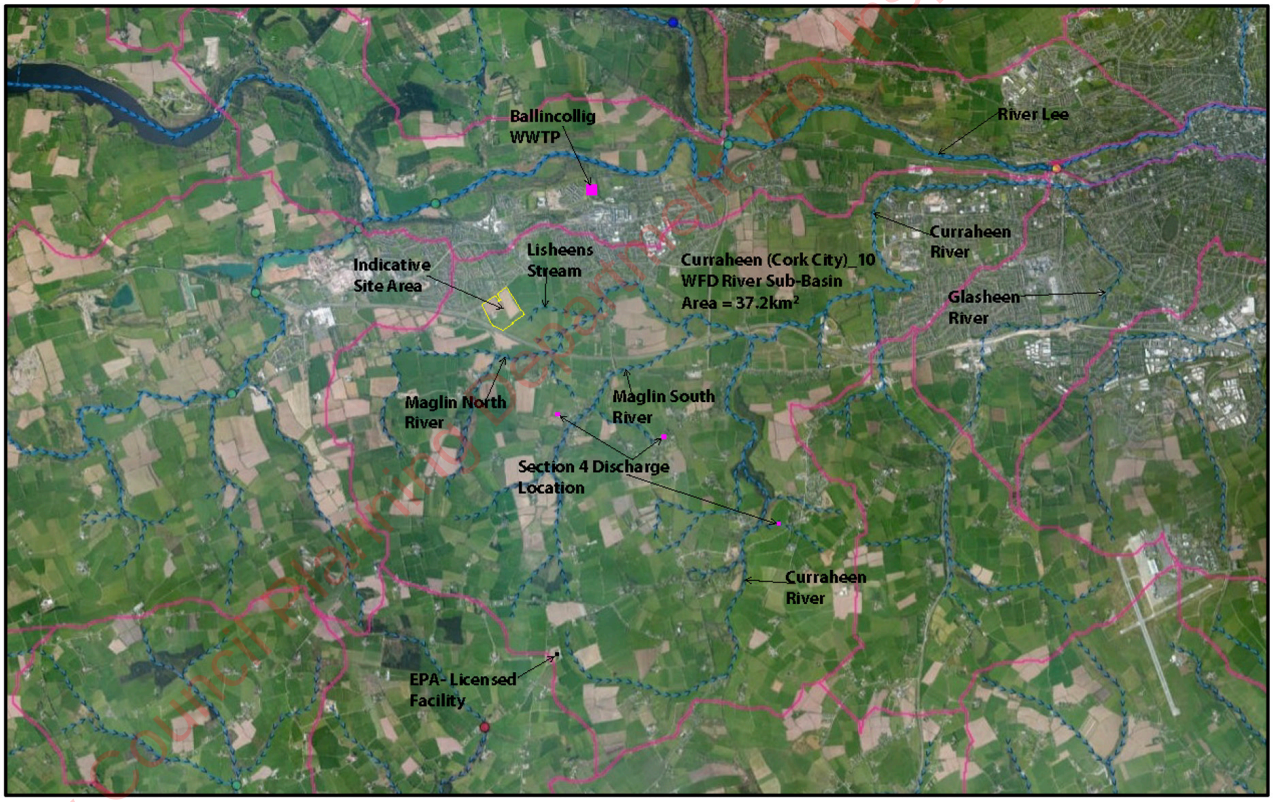

Figure 7.1 Curraheen River Sub-Basin Catchment

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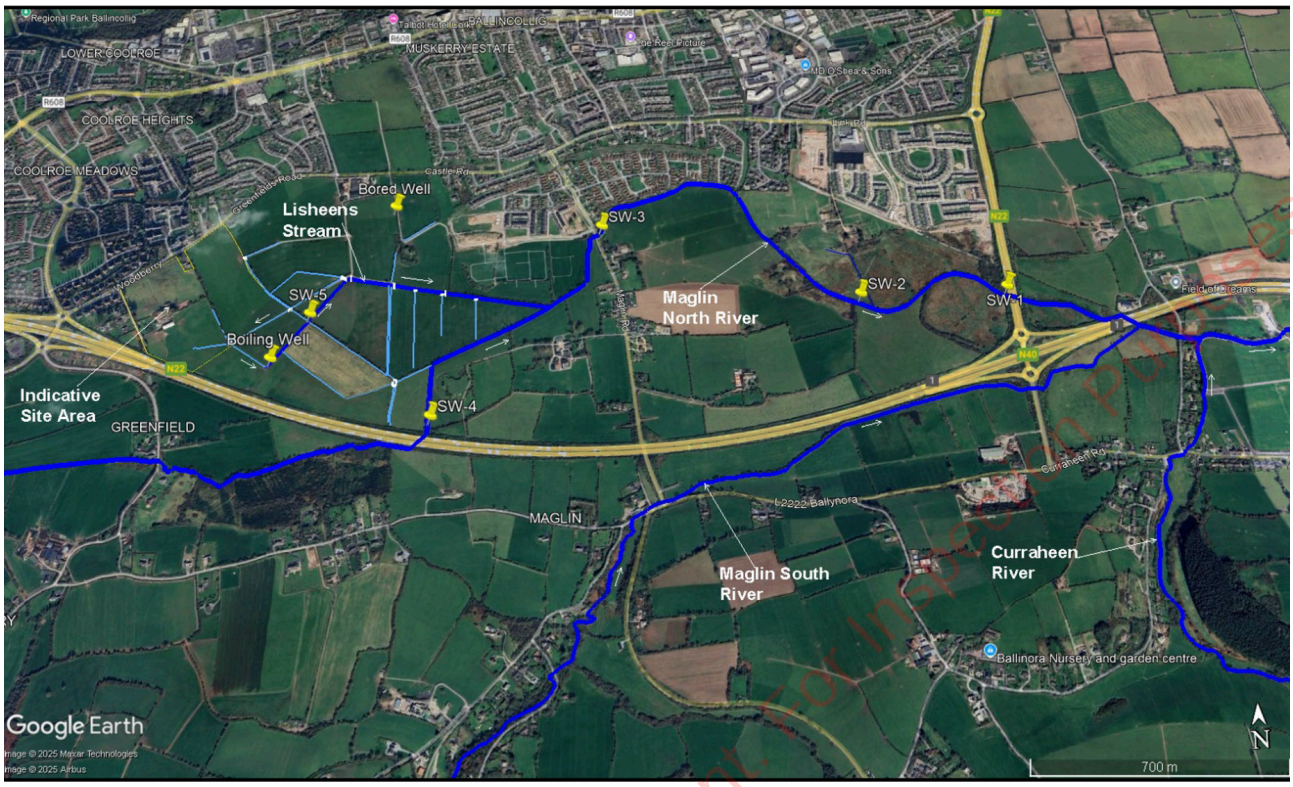

Figure 7.2 Local Drainage

Overall, the importance of the site in terms of its surface water attributes is rated as Very High due to its connection to protected sites in Cork Harbour, approximately 15km (direct line measurement) to the east of Greenfield.

The main potential impacts on surface water during the construction phase include pollution from siltation of the receiving waters from erosion of earthworks areas; spillage of diesel / oil used by site plant and machinery (which could potentially affect groundwater quality); release of concrete or concrete rinse water to the open drain; and foul effluent from welfare facilities at the construction site compound. Appropriate handling and management of potentially polluting material will be employed during the construction phase. Surface water protection measures will also be put in place to treat stormwater runoff before it reaches any watercourse or drain. Monitoring of water quality is proposed to ensure effectiveness of the treatment infrastructure. The potential operational impacts include increased runoff volumes from hard paved surfaces. Appropriate design and mitigation have been used to reduce these potential impacts. The discharge from the site will be limited to greenfield runoff volumes. The flood risk assessment carried out for the project indicates that the southeastern corner of the site could potentially be flooded. The proposed distributor road servicing the development encroaches into this flood extents area, reducing its storage capacity. Modelling indicates that with mitigation (including on-site compensation) the flood extends area will not affect third party lands.

Water quality will be protected with the use of sustainable drainage systems (SuDS) infrastructure and oil interceptors. It is noted that infiltration SuDS infrastructure is not proposed to avoid the risk of subsidence as this area is underlain by limestone susceptible to karstification.

Indirect impacts associated with the proposed development include increase demand on the water supply, sourced from the Inniscarra Reservoir and increase sewerage to be treated at Ballincollig wastewater treatment plant. Uisce Eireann has indicated that the increased demand is within the capacity of both facilities.

No significant residual impact is predicted for the surface water environment.

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Groundwater is found in the bedrock formations underlying the site. Both are classified by the Geological Survey of Ireland as Regionally Important Aquifer - Karstified (diffuse). There are no abstraction wells on the site. The farmhouse and farm are serviced by mains water. A number of wells exploiting the aquifers are located in the wider area. The bedrock aquifers and wells are shown on Figure 7-3.

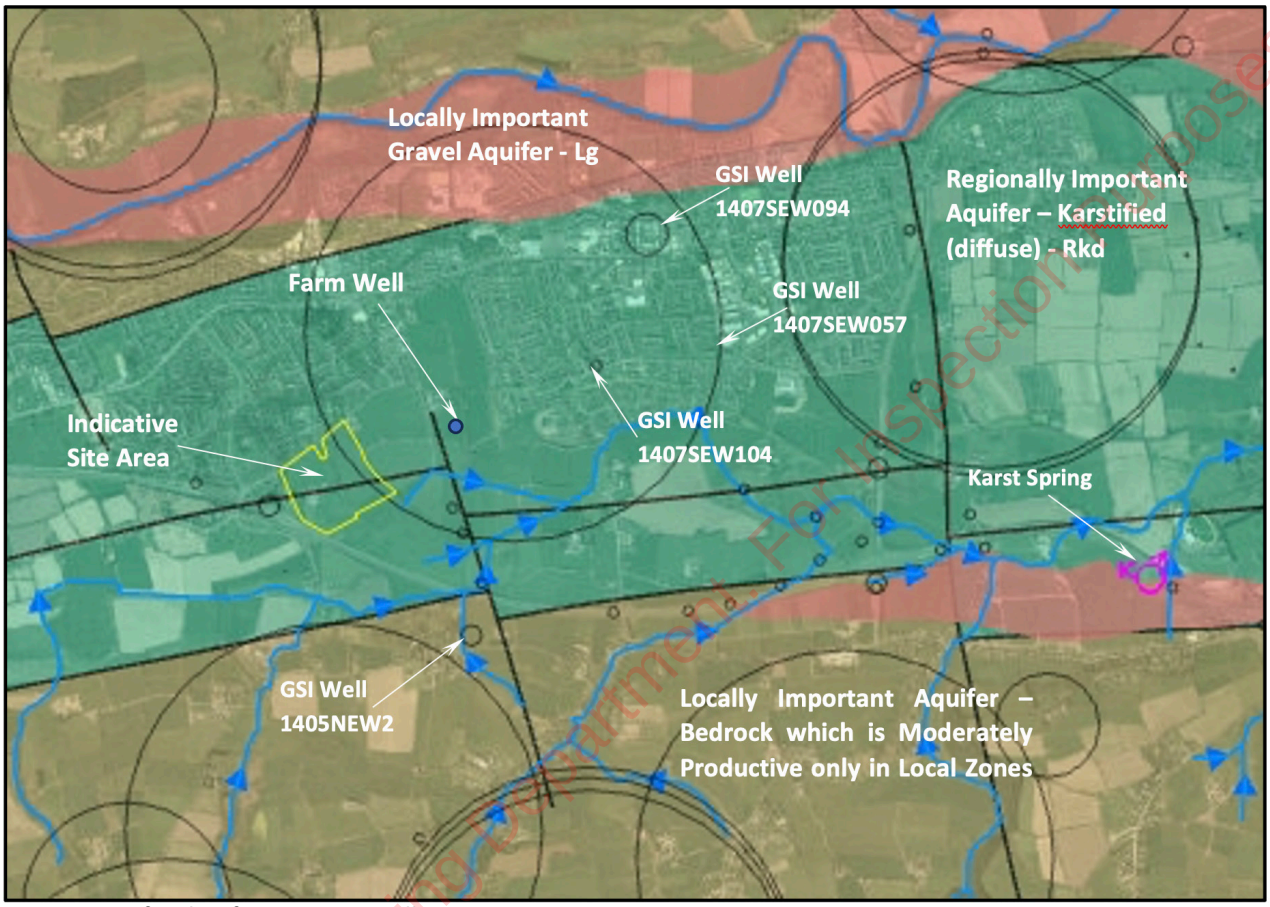

Figure 7.3 Aquifer Classification & GSI Well Location Map

No significant impacts on groundwater are envisaged for the proposed development.

It is concluded that the proposed development is compliant with the Water Framework Directive.

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CHAPTER 8 | Biodiversity

8.1 Introduction

This chapter describes the likely significant effects of the proposed development on biodiversity, including flora (plants), fauna (animals), and habitats in both the terrestrial and aquatic environment. Mitigation measures are also described, where applicable or appropriate, that avoid or minimise adverse biodiversity effects. An Appropriate Assessment (AA) Screening and Natura Impact Statement (NIS) has also been prepared for the project, is included as Appendix 8-4 of this EIAR, and these will be submitted to the planning authority as part of the planning application documentation.

8.2 Assessment Methodology

8.2.1 General

The biodiversity assessment addresses the potential likely significant direct, indirect and cumulative effects of the proposed development on terrestrial and aquatic biodiversity, including flora, fauna, and habitats in proximity to the proposed development site. The assessment has been carried out in three stages:

1. Desktop assessment
2. Site visits and field surveys by the specialist ecologists to establish the existing ecological conditions within the footprint of the proposed development and within the vicinity of all the proposed development elements.
3. Evaluation of the proposed development and determination of the scale and extent of potential likely direct and indirect significant effects on biodiversity (i.e., flora, fauna, and habitats) and the identification of appropriate mitigation and monitoring which may be required.

8.3 Baseline Environment

8.3.1 European Sites

The proposed development site does not form part of any SPA or SAC. Determination of this project's likely Zone of Impact (ZoI) was achieved by assessing all elements of the proposed project against the ecological receptors within the project footprint, in addition to all ecological receptors that could be connected to and subsequently impacted by the proposed project through impact pathways. To this end, the ZoI extends outside of the proposed development footprint to include ecological receptors connected to the project through overlap /intersection, proximity and connectivity to features such as waterbodies. The proposed development site is located within the likely ZoI of one designated sites i.e. Cork Harbour SPA (Table 8-1 and Figure 8-1).

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Table 8.1 European sites and their location relative to the proposed development site

European sites name and code	Distance from site boundary (at closest point) and potential source-pathway-receptor link	Qualifying interests (QI)/ Special Conservation Interests (SCI)
Special Protection Area (SPA)		
Cork Harbour SPA (site code 004030)	11.5km east (16.9km downstream). The Lisheens Stream, a tributary of the Grange Hill and Curraheen Stream, is located at the south-eastern corner of the proposed development site. During operation, the proposed surface water drainage network will discharge to this stream. The Lisheens Stream meets the stream c.2.8km downstream of the proposed development site (via the Grange Hill Stream). The Stream meets the Glasheen River c.5.9km downstream of this and the River Glasheen flows into the Lee Estuary 3.7km downstream of this point. The Cork Harbour SPA is located 4.5km downstream of this point. Therefore, although unlikely, surface water run-off/discharges during the construction or operational phases could potentially flow into the Cork Harbour SPA via the Lisheens Stream (16.9km downstream). Wastewater from the site will ultimately discharge into River Lee via the Ballincollig Wastewater treatment plant (WWTP) approximately 14.6km upstream of Cork Harbour SPA. This could potentially impact on water quality within the Cork Harbour SPA. Although unlikely given the distance involved, surface water run-off/discharges during the construction or operational phases as well as wastewater discharges from the proposed development could potentially impact on Cork Harbour SPA via the Lisheen River and River Lee. Habitats within or near the proposed development area could also potentially provide ex-situ foraging grounds for SCI species outside the Cork Harbour SPA.	Birds A193 Common Tern (*Sterna hirundo*) A028 Grey Heron (*Ardea cinerea*) A130 Oystercatcher (*Haematopus ostralegus*) A140 Golden Plover (*Pluvialis apricaria*) A157 Bar-tailed Godwit (*Limosa lapponica*) A056 Shoveler (*Anas clypeata*) A156 Black-tailed Godwit (*Limosa limosa*) A052 Teal (*Anas crecca)* A183 Lesser Black-backed Gull (*Larus fuscus)* A054 Pintail (*Anas acuta*) A149 Dunlin (*Calidris alpina*) A017 Cormorant (*Phalacrocorax carbo*) A162 Redshank (*Tringa totanus*) A004 Little Grebe (*Tachybaptus ruficollis*) A050 Wigeon (*Anas penelope*) A160 Curlew (*Numenius arquata*) A005 Great Crested Grebe (*Podiceps cristatus*) A069 Red-breasted Merganser (*Mergus serrator*) A048 Shelduck (*Tadorna tadorna*) A142 Lapwing (*Vanellus vanellus*) A179 Black-headed Gull (*Chroicocephalus ridibundus*) A182 Common Gull (*Larus canus*) A141 Grey Plover (*Pluvialis squatarol*a) Habitats Wetlands

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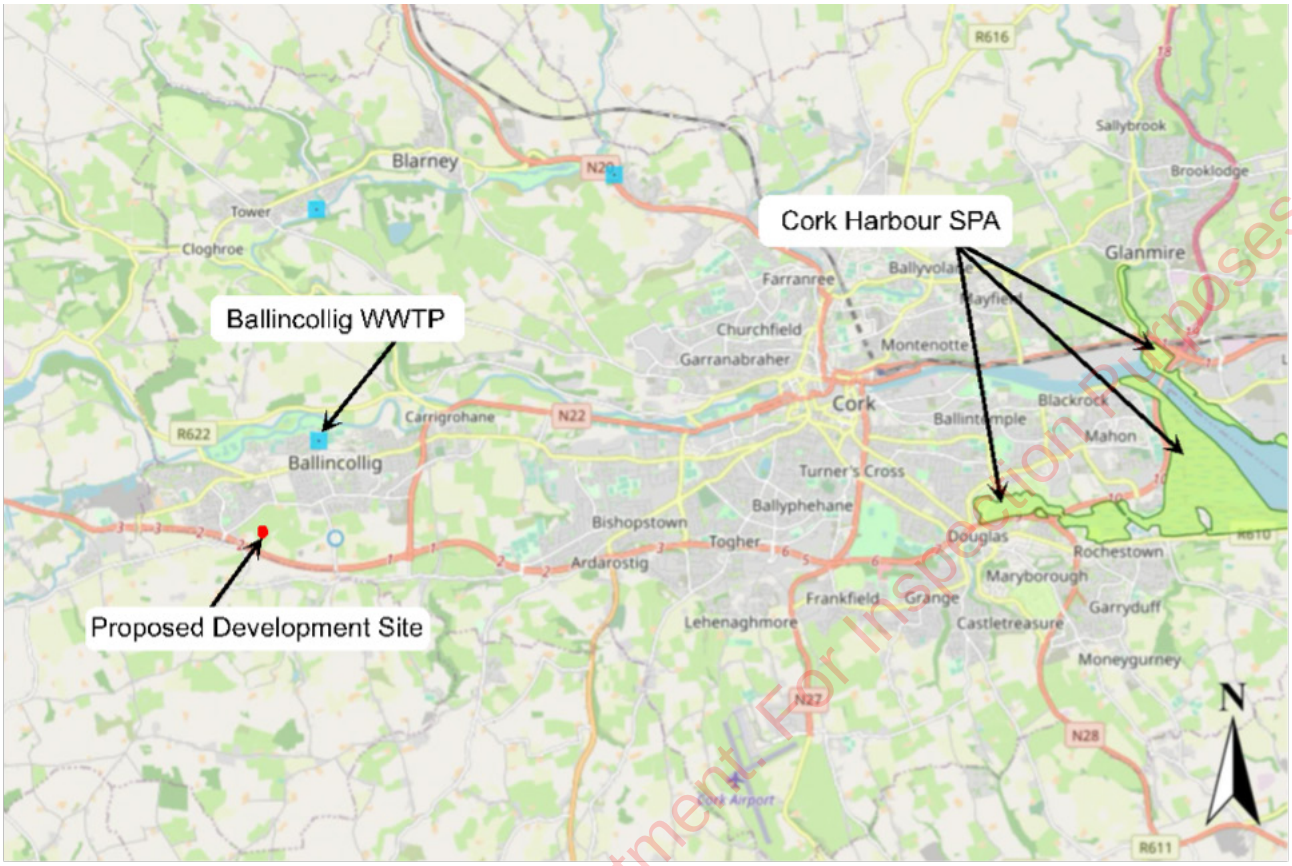

Figure 8.1 European sites within likely zone of impact of proposed development site | Source EPA Envision mapping | Not to scale

The proposed development site lies relatively close to the proposed Ballincollig Cave pNHA c. 390m northeast. However, no pathway for impact has been identified to the qualifying habitats for which this pNHA is proposed for designation. It is noted there are no records of Lesser Horseshoe Bat in Ballincollig caves and the closest known roost is located over 3km from the proposed development site. The value of the proposed development site for bats is discussed in detail in Section 8.3.7 of this EIAR.

Effluent from the proposed development will ultimately be conveyed to Ballincollig WWTP for treatment prior to discharging into the waters of the River Lee. Large sections of the River Lee, upstream and downstream of the primary discharge point from the Ballincollig WWTP, form part of the Lee Valley pNHA. Therefore, there is a potentially hydrological connection to this pNHA via wastewater discharges.

8.3.2 Existing Habitats

The site of the proposed development lies within Ordnance Survey National Grid 10km square W56. The National Parks and Wildlife Service (NPWS) rare plant database does not note the presence of any protected plant species within grid square W56 (hectad). The National Biodiversity Data Centre (NBDC) online database provides data on the distribution of mammals, birds, and invertebrates within Irish 10km grid squares. Some 185 flowering plants are listed by the NBDC as present in the grid square W56. There are no flowering plants listed by the NBDC as either threatened species or requiring designation within grid square W56. A detailed botanical survey was carried out at the site in May 2025 and the results of this survey are included in Appendix 8.2 of this chapter. No rare, uncommon or red list species were recorded during the site survey, nor are they expected to occur given that the habitats within the proposed development site are dominated by managed agricultural habitats.

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The site provides for a variety of habitats of local importance of lower-higher value including.

- Buildings And Artificial Surfaces BL3.
- Scattered trees and parkland - WD5 / Flower beds and borders BC4.
- Hedgerows WL1 H1.
- Hedgerow WL1 H2.
- Hedgerows WL1/Stonewalls and other stonework BL1.
- Treeline WL2 T1.
- Treeline WL2 T2.
- Treeline WL2 T3.
- Treeline WL2 T4.
- Treeline WL2 T5.
- Improved Agricultural Grassland GA1.
- Drainage Ditch FW4.

Figure 8.2 Habitats recorded within proposed development site boundary

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Figures 8.3 Treelines and hedgerows within proposed development site boundary

8.4 Residual Effects

8.4.1 Designated sites

Potential impacts on designated Natura 2000 sites (SAC/cSAC/SPA) are specifically addressed in a Report for Screening for Appropriate Assessment (AA) and Natura Impact Statement (NIS) which has been submitted as part of this application. This report concluded the following:

It has been objectively concluded following an examination, analysis and evaluation of the relevant information, including in particular the nature of the predicted effects from the proposed development and with the implementation of the mitigation measures proposed, that the construction, operation and decommissioning of the proposed development will not adversely affect (either directly or indirectly) the integrity of any European site, either alone or in combination with other plans or projects. There is no reasonable scientific doubt in relation to this conclusion. The competent authority will make the final determination in this regard.

Similarly, following the implementation of mitigation measures, no adverse effects on NHAs/pNHAs will occur.

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8.4.2 Habitats/Flora

Biodiversity net gain occurs where a development leaves biodiversity in a better state than before. The principles for biodiversity net gain as outlined in CIEEM (2016) and CIEEM (2019) have been followed throughout the ecology surveys, project design and mitigation measures to ensure that the best outcomes for biodiversity are achieved. The proposed development has avoided removing higher value habitats. Where higher value habitats cannot be avoided the impact on these habitats has been minimised and the loss of these habitats has been compensated for through focused landscape design and mitigation measures.

Where higher value habitats cannot be avoided the impact on these habitats has been minimised and the loss of these habitats has been compensated for through focused landscape design. While 100m of linear native hedgerow will be removed, 1,213m will be retained and 435m of native hedgerow will be planted. The majority of mature/semi-mature trees at the site will be retained i.e. 40, with 14 trees earmarked for removal. Tree removal is largely non-native species such as Sitka spruce, Monterey cypress and Eucalyptus, with a small number of Ash. Native planting will include 778 trees at the site (*Quercus robur, Pinus sylvestris, Tilia Cordata, Sorbus aucuparia* and *Betula pendula)* and the landscape scheme has been designed to enhance connectivity with the existing linear features onsite as well as the wider landscape in the long-term.

A range of biodiversity enhancements have been specified to provide replacement habitat for existing species e.g. Hedgehog, Robin, Swallow etc and new habitats for other species e.g. Swift, bats etc.

Areas of new and replacement habitat has been created, considering the local flora and fauna, to provide biodiversity gain that is valuable locally as well as making important contributions towards regional and national priorities for nature conservation. Overall, the project will enhance ecological connectivity within and outside the proposed development site boundary.

Mitigation measures, outlined in **Section 8.4.4 (Volume II)** will be implemented and inspected by a suitably qualified and experienced project ecologist to ensure that no adverse impacts on aquatic habitats during construction works.

8.4.3 Invasive species

No residual impacts have been identified.

8.4.4 Non-volant mammals

Small areas of locally valuable habitat will be removed. While there is no evidence to indicate that the proposed development is of particular value for mammal species in the context of the surrounding countryside, the loss of habitat combined with increased operational disturbance from occupied dwellings is likely to reduce the value of the site for mammal. During the construction phase, disturbance and site clearance works are predicted to have a negative, slight and medium to long-term impact on other mammal species.

Mammals are generally nocturnal in habit and in many circumstances can tolerate high levels of human presence and disturbance.

The retention and enhancement of significant areas of valuable habitats such as treelines and hedgerows will mean that small mammal species such as Hedgehog and Pygmy Shrew are likely to quickly recolonise the area following construction works. The creation of new semi-natural habitats, including retention of understorey habitats alongside additional planting will continue to provide areas of cover for small mammals.

Overall, the residual impact on other mammals is predicted to be negative, not significant and long-term at a local level.

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8.4.5 Volant Mammals

In the short to medium term there will be a slight impact on bat foraging and commuting habitat at the proposed development site with the removal of small areas of internal treeline. However, tree protection measures, alongside the landscape plan, will ensure that the majority of treelines and hedgerow habitat at the site is retained.

The landscape plan provides considerable areas of enhanced and new linear foraging habitat (747 new planted trees) on internal and external boundary habitats. As these habitats mature, there are likely to provide high value foraging and commuting habitats for local bat populations and provide connectivity to the wider landscape. Biodiversity enhancements, including a range of bat boxes, will create roosting opportunities for bats within the proposed development site, where roosting habitat is currently largely absent.

Lighting plans for the site have been designed in line with Bat Conservation Guidelines. However, light levels will increase at the site during operation. It is noted that the bat species which currently use the site are more common and/or light tolerant species which are likely to continue to forage along retained habitats.

Overall, the residual impact of the proposed development will be negative, slight and long-term at a local level.

8.4.6 Amphibians and reptiles

No residual effects.

8.4.7 Birds

Winter birds

The grassland area of the proposed development site is of low value for wintering wading birds and waterbirds. Residual impacts on SCI birds will be imperceptible.

In the short to medium term, the loss of common habitats associated with site clearance works and disturbance will have a slight, negative impact on wintering passerines which use the proposed development site. However, as newly planted and enhanced habitats within the proposed development site mature, this impact will be reduced.

The landscape plan includes newly planted hedgerows and treelines and native meadow. Native berry producing plants, such as Holly have been included in the planting scheme to ensure that foraging opportunities for birds continue throughout the winter period. Residual impacts on resident winter birds will be positive, slight and long-term at a local level.

Breeding birds

In the short to medium term, the loss of common habitats associated with site clearance works and disturbance will have a slight, negative impact on breeding birds. However, as newly planted and enhanced habitats within the proposed development site mature, this impact will be reduced.

The landscape plan will provide additional breeding and foraging habitat for red list, amber list species and other common bird species. New habitats within the proposed development site are likely to increase breeding bird diversity at the site. Biodiversity enhancements have been designed to attract new species to the site, such as Swift as well as providing nesting opportunities for existing species such as Treecreeper and Swallow. Native berry producing plants, such as Blackthorn and Hawthorn, have been included in the planting scheme to provide additional foraging habitat for breeding birds.

Residual impacts on breeding birds will be positive, slight and long-term at a local level.

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8.4.8 Other species

Following construction mitigation and operational design measures, residual impacts on fish and aquatic invertebrates will be neutral, imperceptible and long-term at a local level.

Additional habitats, both natural and artificial, will be created for terrestrial invertebrates. Native wildflower meadow and native tree planting will provide considerable areas of new habitat for terrestrial invertebrates. SuDS areas will also provide new habits for a range of terrestrial invertebrates. Biodiversity enhancements including insect hotels and loggeries will create breeding sites for a range of terrestrial invertebrates.

Residual impacts will be positive, slight and long-term at a local level.

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CHAPTER 9 | Cultural Heritage

9.1 Existing Environment

There are no recorded archaeological monuments or protected architectural structures within the footprint of the proposed development. However, the wider study area is rich in archaeological heritage, with thirty-six recorded sites within a 1.5 km radius, indicating a long history of human settlement in the region. The two closest recorded monuments, both fulachtaí fia, are located approximately 110m and 150m from the site boundary.

There are no Protected Structures (PS) or buildings listed in the National Inventory of Architectural Heritage (NIAH) within the proposed development site. While a modest residential building and associated farm structures are present on-site, these are not considered of architectural or historical significance.

9.2 Impact Assessment

9.2.1 Do Nothing Scenario

Should the proposed development not proceed, the existing landscape would remain in its current condition. Any potential subsurface archaeological features would remain undisturbed, with no alteration to the setting or visual character of the site.

9.2.2 Construction Phase

Archaeology - Registered Archaeological Monuments

There are no recorded archaeological sites on the footprint of the proposed development. Consequently, there will be no significant direct or indirect impacts on any registered archaeological monuments.

Potential for Previously Unknown Archaeological Sites or Features

Given that a significant portion of Ireland's archaeological resource survives as subsurface remains, there remains a moderate potential for the presence of previously unknown archaeological features. Extensive topsoil stripping and groundworks during the construction phase could result in direct, negative impacts on any such features.

To assess this risk, two phases of geophysical survey were undertaken on the proposed development site and adjacent lands in 2021 and 2024 (Leigh 2021; Leigh 2024). While no significant archaeological deposits were identified, a number of isolated magnetic anomalies (Anomalies 3 and 8) were detected and interpreted as either possible pit-type features or deeply buried ferrous material.

Targeted archaeological testing followed, involving the excavation of 27 trenches on the site and one trench on adjacent lands. This confirmed the presence of seven archaeologically significant features:

- Five features (F2–F6) in Field 1, each approximately 1 metre in diameter, were identified as small charcoal-rich pits or roasting pits, associated with Anomaly 8.
- Two features (F7–F8) in Trench 20 of Area A were also charcoal-rich pits corresponding to Anomaly 3.

Other trenches investigating the same anomalies yielded no archaeological remains, indicating that these features were isolated and not part of a broader archaeological complex.

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There is moderate potential for the discovery of additional, previously unknown archaeological features during construction, especially in areas not covered by testing or where anomalies remain ambiguous.

Architecture

There are no PS listed in the Cork City Development Plan, nor any structures included in the NIAH within the proposed development site. A house shown on the 1939 OS map, along with modern farm outbuildings in the western part of the site, will be demolished to facilitate the development. These structures are not considered to have architectural or historical significance.

The proposed development will not result in any significant direct or indirect impacts on Protected Structures, NIAH-listed buildings, or any structures of architectural or historical interest.

9.2.3 Operational Phase

During the operational phase, no significant direct or indirect effects on archaeological/architectural effects are anticipated. The proposed development will not introduce visual intrusion or disturbance that would impact the setting or appreciation of nearby heritage features.

9.3 Visual Impact Assessment

There are no recorded monuments or registered architectural sites within the footprint of the proposed development. The nearest known archaeological features are either subsurface with no visual expression or have been excavated and removed, and therefore do not contribute to the current visual landscape.

The most prominent heritage site, Ballincollig Castle, is located approximately 400m northeast of the proposed development site. A Landscape and Visual Impact Assessment – Chapter 3 of the EIAR, concluded that views from the castle are very limited due to screening by hedgerows and castle walls. The proposed development may be faintly visible in the distance but is not expected to cause any significant visual impact and is classified as ‘Not Significant Neutral’.

In the wider study area, 31 other archaeological monuments are recorded; Ten were excavated and removed for the N22 project, thirteen are fully subsurface with no visible remains and eight have only subtle surface expression and are located at sufficient distance to avoid visual impact. None are intervisible with the development site due to topography, vegetation, and surrounding development. The proposed development will not result in any significant visual impact on the area's archaeological or architectural heritage due to the subsurface or removed nature of nearby features, the lack of visual connectivity with key heritage assets, and the effective screening provided by natural and built elements in the landscape.

9.4 Cumulative Impact

There are no registered archaeological monuments or protected architectural structures within the proposed development site. However, archaeological testing has identified seven archaeological features within the site, and there remains a moderate potential for the discovery of additional subsurface remains during construction.

Cumulative effects may arise when the proposed development is considered alongside the Maglin Sustainable Access Corridor, the Link Road project, and other nearby residential or infrastructural developments. Together, these projects contribute to the ongoing urbanisation of the area, which may increase the risk to unrecorded archaeological remains.

To address this, appropriate mitigation measures will be implemented, including: preservation by record, archaeological monitoring, and excavation, as appropriate.

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This integrated archaeological management approach will ensure that known and unknown features are properly identified, recorded, and protected, thereby minimising the potential for significant cumulative impacts on the cultural heritage of the area.

9.5 Mitigation – Construction Phase

Targeted archaeological testing confirmed the presence of seven archaeologically significant features - five (F2–F6) in Field 1 and two (F7–F8) in Trench 20 of Area A. These features will be excavated in advance of construction and preserved by record.

Licensed archaeological monitoring of all topsoil removal will be undertaken during construction. If archaeological features or deposits are revealed, the NMS and the Planning Authority will be consulted as outlined in Framework and Principles for the Protection of the Archaeological Heritage (1999). All newly identified archaeological sites will be preserved in situ or by record and sufficient time and resources will be allowed to resolve all archaeological matters. Preservation by record will require the excavation of the archaeological material and such material will be fully resolved to professional standards of archaeological practice (Policy Guidelines on Archaeological Excavation – Department of Arts, Heritage, Gaeltacht and the Islands). This work will be funded by the developer.

9.6 Residual Effects

Following a comprehensive assessment, the residual effects of the proposed development on the cultural heritage environment are assessed as not significant.

There are no registered archaeological monuments or architectural structures on the proposed development site. There will be no direct or indirect effects on any PS's, NIAH-listed buildings or any structure of historic/architectural merit.

Due to the subsurface character of nearby archaeological sites, the lack of visual connectivity, and the presence of intervening development and vegetation, the potential visual impact of the proposed development on surrounding heritage assets is considered not significant.

The archaeological excavation and preservation by record of the seven features identified during testing, along with licensed archaeological monitoring during construction, will serve as effective mitigation, ensuring that any unexpected archaeological material encountered is appropriately addressed.

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CHAPTER 10 | Noise & Vibration

10.1 Introduction

The assessment of Noise & Vibration is contained within Chapter 10 of Volume II. The chapter provides information on the assessment of noise and vibration impacts on the surrounding environment during the construction and operational phases of the project.

10.2 Existing Environment

The existing and future noise and vibration environments across the development site and in the vicinity of the nearest existing noise sensitive locations (NSLs) are dictated by transportation sources from the surrounding road network.

10.3 Impact Assessment

10.3.1 Do Nothing Scenario

The Do Nothing scenario includes retention of the current site without the proposed development in place. In this scenario, noise levels at the site will change in accordance with trends within the wider area (including influences from potential new developments in the surrounding area, changes in road traffic, etc).

10.3.2 Construction Phase

The construction phase will involve site clearance, bulk excavation, road works, building construction works and landscaping. The assessment has determined that whilst there will be increased construction related noise at the closest noise sensitive locations to the proposed development, the majority of works can be controlled to within the adopted construction noise thresholds. The exceptions to this statement are during high noise level activities such as site clearance, bulk excavation, foundations and road works when works are within 60m of the closest noise sensitive locations and during superstructure, compounds and landscaping works which are within 25m of the closest noise sensitive locations in the absence of noise mitigation measures.

There are no construction vibration sources that will give rise to any significant vibration impacts.

10.3.3 Operational Phase

Once operational there are no noise sources associated with the proposed development that will give rise to any significant noise impacts. Operational activities are those which form part of the existing surrounding environment at neighbouring residential areas (estate vehicle movements, children playing etc.) and hence no significant impact is expected from this area of the development site.

Additional Vehicular Traffic on Surrounding Roads

During the operational phase, the predicted change in noise levels associated with additional traffic in the surrounding area is neutral to negative, imperceptible to not significant and long-term.

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Building Services Plant

Once the relevant noise criteria are not exceeded within the Proposed Development, the related noise impact to existing noise sensitive locations offsite will be negative, not significant and long-term.

10.3.4 Cumulative Impact

Cumulative noise levels associated with the cumulative construction phase of the proposed development have been considered. In the event that the proposed development phases of works are under construction at the same time, due to the distance to the closest development, there will be no cumulative effect.

10.4 Mitigation

10.4.1 Incorporated Design

The following mitigation measures are outlined for further review at the detailed design stage of the project:

The closest noise sensitive receptors to the operational building services and plant are within the development itself (i.e. they are much closer than off-site sensitive receptors). Therefore once the relevant internal noise criteria are achieved within the development at the detailed design stage, there are no additional mitigation requirements to control at off-site noise sensitive locations.

An assessment of inward noise levels from existing road traffic surrounding the proposed development has been undertaken. The building facades are expected to achieve suitable internal noise levels with standard double glazing and the inclusion of a 2.5m high boundary screen (either by use of walls, proprietary timber noise barrier, earth berms or a combination of these elements, once a 2.5m height from existing topography to top of barrier is achieved) to the south the site boundary overlooking the N22.

10.4.2 Construction Phases

During the demolition and construction phases of the Proposed Development, the use of best practice noise control measures, hours of operation, scheduling of works within appropriate time periods, strict construction noise limits will ensure impacts are controlled within the adopted criteria. Similarly, vibration impacts during the construction phase will be well controlled through the use of low vibration generating equipment as standard for residential construction sites.

10.4.3 Operational Phase

During the operational phase of the development, noise mitigation measures with respect to the impact of traffic from the development are not deemed necessary.

10.5 Residual Impact Assessment

During the construction phase, the residual construction noise impact is negative, not significant to moderate and temporary to short-term. The human perception of vibration effects is negative, not significant to moderate and temporary to short-term.

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During the operational phase, the predicted change in noise levels associated with additional traffic in the surrounding area is neutral to negative, imperceptible to not significant and long-term. The predicted change in noise levels associated with buildings services in the surrounding area is negative, not significant and long-term.

The resultant residual inward noise effect will be of neutral, not significant and long term.

Overall, no significant noise and vibration impacts are predicted during the construction or operational phases of the proposed development or cumulative development.

10.6 Monitoring

As outlined in Chapter 10, during the construction phase, the appointed contractor will be required to carry out noise and vibration monitoring at site boundaries to the southwest, west and north site boundaries of the site. These monitors will be set up where there is the potential to exceed the construction noise thresholds, i.e. when works are occurring within 60m of the site boundary and within 50m of vibration sensitive locations for human perception to noise, rather than cosmetic damage for buildings.

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CHAPTER 11 | Air Quality

The assessment of Air Quality is contained within Chapter 11. The air quality assessment has focussed on:

- Potential construction dust emissions and impacts to nearby sensitive receptors such as residential properties, schools, hospitals, etc.
- Potential vehicle emissions from traffic accessing the site for construction works and during operation.

11.1 Existing Environment

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

11.2 Impact Assessment

11.2.1 Do Nothing Scenario

In the Do Nothing scenario, the site will remain unchanged, and air quality will follow existing trends. These trends may be influenced by nearby developments and traffic. Since the site is zoned for development, a similar project is likely to be built in the future. As a result, air quality impacts are expected, even without the proposed development and will be ***direct, long-term and negative*** which is overall ***not significant.***

11.2.2 Construction Phase

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

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

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

11.2.3 Operational Phase

Operational phase traffic has the potential to impact air quality due to vehicle exhaust emissions as a result of the increased number of vehicles accessing the site. Operational stage traffic emissions were calculated at representative

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worst-case receptors in the area, and it was determined that concentrations of NO_2, PM_{10} and $PM_{2.5}$ will increase by an imperceptible amount as a result of the proposed development. Operational stage traffic emissions will have a ***long-term, direct, localised, negative*** and ***not significant*** impact on air quality.

11.2.4 Cumulative Impact

There is the potential for cumulative impacts to air quality should the construction phase of the proposed development coincide with that of other developments within 500 m of the site. A review of proposed/permitted developments in the vicinity of the site was undertaken. There were no permitted projects within 500 m of the proposed development site and therefore, there is no potential for cumulative construction dust impacts to nearby sensitive receptors.

The dust mitigation measures outlined in Section 11.7.1 of Chapter 11 will be applied during the construction phase which will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the proposed development is deemed ***direct, short-term, negative*** and ***not significant.***

Operational phase direct impacts on air quality associated with the proposed development are predicted to be ***long-term, direct, localised, negative*** and overall, ***not significant***.

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

11.3 Mitigation

11.3.1 Construction Phase

Detailed dust mitigation measures are outlined within Section 11.7.1 of Chapter 11 to ensure that no significant nuisance as a result of construction dust emissions occurs at nearby sensitive receptors. Once these best practice mitigation measures, derived from the Institute for Air Quality Management 2024 guidance '*Guidance on the Assessment of Dust from Demolition and Construction'* as well as other relevant dust management guidance, are implemented the impacts to air quality during the construction of the proposed development are considered, ***short-term, direct, negative*** and ***imperceptible,*** which is overall ***not significant*** in EIA terms, posing no nuisance at nearby sensitive receptors (such as local residences).

11.3.2 Operational Phase

No site-specific mitigation measures are proposed for the operational phase. The impact to air quality has been assessed as ***long-term, direct, localised, negative*** and overall, ***not significant***

11.4 Residual Impact Assessment

When the dust mitigation measures are implemented, the residual effect of fugitive emissions of dust and particulate matter from the site will be ***short-term, direct, localised, negative*** and ***not significant***.

The impact to air quality during the operational phase of the proposed development as a result of emissions from vehicles accessing the site have been assessed as having a ***long-term, direct, localised, negative*** and ***not significant***.

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CHAPTER 12 | Climate

The assessment of Climate is contained within Chapter 12. The climate assessment has incorporated the following assessments:

- The potential greenhouse gas emissions during the construction and operational phases of the development.
- The vulnerability of the project to climate change, including considerations for increased rainfall and other projected climate impacts.
- The design measures to enhance the project's resilience to future climate risks, such as incorporating drainage systems for increased rainfall.

12.1 Existing Environment

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and alignment with Ireland's 2030 sectoral emissions ceilings and carbon budgets. The EPA state that Ireland had total GHG emissions of 58.83 Mt CO_2e in 2023. This is 2.22 Mt CO_2e higher than Ireland's annual target for emissions in 2023. EPA projections indicate that Ireland has used 63% of the 295 Mt CO_2e Carbon Budget for the five-year period 2021-2025. Further reduction measures are required to stay within the budget requirements.

12.2 Impact Assessment

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

The impact of the construction and operation of the proposed development on Ireland's total national greenhouse gas emission is compared to Ireland's 2023 total greenhouse gas emissions, the relevant sectoral emissions ceilings and 2030 carbon budgets. Any adverse impacts are predicted to primarily occur during the construction phase, with the dominant sources of greenhouse gas emissions due to the development resulting from the embodied carbon associated with the building materials for the proposed development.

12.2.1 Do Nothing Scenario

In the Do-Nothing scenario, the site will remain as per the baseline and will change in accordance with trends within the wider area (including influences from potential new developments in the surrounding area, changes in road traffic, etc).

As the site is zoned for development, it is likely that in the absence of the proposed development a development of a similar nature would occur. Therefore, the predicted climate impacts within this report are likely to occur even in the absence of the proposed development.

12.2.2 Greenhouse Gas Assessment

12.2.2.1 Construction Phase

The GHG emissions associated with the construction of the proposed development was calculated using the online OneClick LCA Tool. The GHG emissions associated with the proposed development are predicted to be a small fraction of Ireland's 2030 carbon budget of 27.7 MtCO_2e and the sectoral emissions ceilings for the Industry, Waste and Transport

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sectors.. The proposed development will incorporate best practice mitigation measures which will aim to reduce climate impacts during construction and once the development is operational.

12.2.2.2 Operational Phase

GHG emissions during the operational phase due to road traffic were assessed. The changes in traffic volumes associated with the operational phase of the development were substantial enough the meet the assessment criteria requiring a detailed climate modelling assessment, as per Transport Infrastructure Ireland (TII) 2022 guidance "PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document". There will be a slight increase in the traffic on the local road network which will result in some minor increases in CO_2e emissions. These have been assessed as a small fraction of Ireland's transport sector 2030 emissions ceiling.

Impacts to climate from the demolition, construction and operational phases are deemed ***direct, long-term, negative*** and ***slight,*** which is considered ***not significant***.

12.2.3 Climate Change Risk Assessment

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

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

12.2.4 Cumulative Impact

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

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

12.2.5 Mitigation

12.2.5.1 Incorporated Design

A number of mitigation measures have been incorporated into the design of the proposed development. The development will comply with the requirements of the Near Zero Energy Building (NZEB) Standards and will achieve a Building Energy Rating (BER) in line with the NZEB requirements. Additionally, other measures have also been incorporated into the design of the proposed development to mitigate the impacts of future climate change. To address future climate change risks, the design includes mitigation measures such as adequate drainage systems to manage a 20% increase in rainfall, consistent with the 'Medium Risk' RCP4.5 scenario (2021-2050).

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12.2.5.2 Construction Phase

A number of best practice mitigation measures are proposed for the construction phase of the proposed development to ensure that impacts to climate are minimised. These mitigation measures include a construction program to determine material reuse and waste recycling opportunities (in compliance with the EU Taxonomy Regulation 2020/852) and identifying and implementing lower carbon material choices and quantities during detailed design.

12.2.5.3 Operational Phase

During the operational phase, emissions will be minimal. The primary focus will be on operational energy usage with renewable energy systems implements where feasible in line with the NZEB requirements. Sustainable travel modes will be encouraged through support facilities for cycling, infrastructure for electrical vehicle charging points and proximity to local bus routes.

12.2.6 Residual Impact Assessment

The impact to climate due to a proposed development must be assessed as a whole for all phases. The proposed development will result in some impacts to climate through the release of GHGs. TII PE-ENV-01104 guidance references the IEMA guidance which states that the crux of assessing significance is "not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050". The proposed development has proposed some best practice mitigation measures and is committing to reducing climate impacts where feasible. Once mitigation measures are put in place, the effect of the proposed development in relation to GHG emissions is considered ***direct, long-term, negative*** and ***slight,*** which is overall ***not significant*** in EIA terms.

In relation to climate change vulnerability, it has been assessed that there are no significant risks to the proposed development because of climate change. The residual effect of climate change on the proposed development is considered ***direct, long-term, negative*** and ***imperceptible***, which is overall ***not significant*** in EIA terms.

12.2.7 Monitoring

Monitoring and reporting of the embodied carbon in the construction phase will be conducted. The aim of monitoring will be to seek further ways to minimise climate impacts.

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CHAPTER 13 | Population & Human Health

13.1 Introduction

This Chapter has been prepared by Harry Walsh, (BA HONS, Master of Regional and Urban Planning, MIPI), Director at HW Planning. The 'Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report' 2017 specifies the following in relation to the assessment of population and human health.

> *"human health a very broad factor that would be highly project dependent. The notion of human health should be considered in the context of the other factors in Article 3(1) of the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study. In addition, these would concern the commissioning, operation, and decommissioning of a Project in relation to workers on the Project and surrounding population."*

A desktop study of the following published policy documents and data was undertaken to appraise the location and likely and significant potential impact upon population and human health receptors and to assess population trends in the subject site an in the wider hinterland:

- Central Statistics Office (CSO) Census 2011 & 2016 and 2022 data.
- Cork City Development Plan 2022-2028

This assessment is a study of the potential indirect and direct socio-economic impacts of the construction phase and the operational phases of the development. Effects on receptors were assessed in terms of magnitude, quality, significance and duration.

13.2 Description of Study Area/Existing Baseline Environment

The study area for the Population and Human Health chapter has been defined to reflect the scale, location, and nature of the proposed Large-scale Residential Development (LRD), and to ensure that potential impacts, both direct and indirect, on human health and population can be comprehensively assessed.

In defining the EIA study area for this chapter a focused analysis of Census boundaries was undertaken, including both Electoral Divisions (ED) and Census Small Areas (SA) which are a sub-division of the ED units and generally cover 65-90 households. Using a combination of these units a study area was defined that:

- Includes the smaller settlements, established and planned residential areas and employment areas served by the Urban Town of Ballincollig. This takes the form of a belt of urban areas built up along the R608 regional road.
- The area is largely delimited by the physical barrier of the River Lee to the north and the and N22/N40 Road to the south.

Prior to the Cork City Boundary extension in 2019 the traditional catchment area of the then County 'Main Town' of Ballincollig was all located within the administrative area of Cork County Council. This catchment now straddles the boundary of Cork City and County Councils, with the Urban Town of Ballincollig and lands to the east falling within the Cork City Council area and the western environs of the town located within the Cork County Council area. However, Ballincollig and its traditional catchment has remained a relatively discrete and self-contained area, and this is reflected in the study area in terms of population, urban amenities and services and employment.

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The study area principally comprises the following Census 2022 EDs:

- Ballincollig ED (Ref. 4701619),
- Ovens ED (Ref. 47127019).

However, to capture the full extent of the Killumney/Ovens settlements, which form a natural part of the wider Ballincollig catchment, the following Census 2022 Sas are also included:

- 047028003
- 047028002
- 047028004
- 047028001
- 047270004
- 047270002
- 047270003

The population of the study area in the 2022 Census was 22,790. The majority of these residents were living within the 2 EDs approximating the area of the settlements of Ballincollig and Ovens (20,8554). Over the 31-year period between 1991 and 2022, the EDs of Ballincollig and Ovens have experienced 63% and 185% population growth respectively. In contrast, Cork City experienced a 25.3% growth in population.

13.3 Community and Social Infrastructure

The existing community and social infrastructure assets in the local area as described in Chapter 13 has been identified in accordance with the categories outlined in the table 13.1 below.

Table 13.1 Community and Social Infrastructure Categories

Category	Description
Amenity, Open Space and Sports	Parks, Playgrounds, Amenity Walks/Greenways, Pitches, Green Areas, Golf Courses, Sports Pitches, Sports Centres, Swimming Pools, Gyms
Childcare and Education	Childcare, Primary Schools, Post Primary Schools, Special Schools, Third Level Universities, Other Educational Institutions
Community facilities	Community Centres, Religious Facilities, Post Offices, Libraries.
Retail services	Supermarkets, Convenient Shops, Specialty Services, Restaurants/Take-aways, ATM, Petrol Station
Health	Hospitals, Health Centres, Clinics, Pharmacies, Addiction Services, GPs, Mental Health Services
Emergency	Fire Station, Garda Station
Public Transport	Bus and Train Routes

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13.4 Impact Assessment

13.4.1 Do nothing Scenario

In the 'do nothing' scenario, the subject lands will remain undeveloped and there will be no additional impacts on population and human health factors. The development of the BusConnects and the Cork Luas plans will progress. Over time it is considered the do-nothing scenario will result in the inefficient use of serviced lands, which are identified for strategic growth, being part of the Maglin Urban Expansion Area in the Cork City Development Plan 2022. It will also represent a missed opportunity to integrate landuse and transport planning and maximised the benefit from the infrastructural investment in the Light Rail Transit.

13.4.2 Impacts on Existing Population

13.4.2.1 Construction Phase

The construction phase of the development may result in some negative, short-term impacts resulting from increased traffic on local road network, noise and vibration, and the generation of wastes including dust.

13.4.2.2 Operational Phase

Once constructed, the proposed development will be permanent and non-reversible. The proposed development will result in several significant long-term positive impacts for the local population including.

- The creation of a new community in the Maglin Urban Expansion Area of Ballincollig will develop in tandem with the delivery of a portion of the Maglin Urban Distributor Road in addition to pedestrian and cycle infrastructure. These will take the form of a number of proposed and planned greenways which provides dedicated walking and cycle connectivity within the Urban Town of Ballincollig. The proposed layout provides for high quality public open spaces promoting outdoor activities and exercise which will benefit existing and future residents of the settlement.
- The delivery of a new creche and retail/commercial unit will positively contribute to Ballincollig's childcare, economy and community facilities.
- The delivery of a diverse range of housing, duplexes and apartments positively contributing to housing supply for all aspects of the housing market.
- The provision of active recreational infrastructure in the form of the Greenway will provide real opportunities for modal shift and the promotion of walking and cycling as viable modes of transport in the wider Ballincollig area.

13.5 Mitigation Measures, Monitoring and Residual Impacts

13.5.1 Mitigation & Monitoring

Full details of all mitigation and monitoring procedures during the construction phase are described in the various chapters of this EIAR and the CEMP which accompanies this LRD. The CEMP has been developed in response to the site-specific context with robust mitigation and monitoring measures being adopted to ensure that any negative impacts arising from the construction phase of the development on neighbouring properties or surrounding areas are minimised. Chapter 15 of this EIAR 'Summary of Mitigation Measures' details all proposed mitigation/monitoring measures to be implemented during construction and operational phases of the project.

The site layout responds to the site's topography and the evolving development context in the Maglin Urban Expansion Area.. The proposed public open spaces, creche and commercial uses will all significantly positively and permanently contribute to the communal and public facilities in the area.

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13.5.2 Residual Impacts

Residual impacts refer to those impacts that remain following the implementation of mitigation measures. It is considered that subject to the mitigation measures outlined in the CEMP and EIAR being implemented the proposed development will result in many positive and permanent residual impacts.

13.6 Cumulative Impacts

13.6.1 Construction Phase

Assessing the cumulative impacts of the construction phase of the development is contingent on the construction schedules of the permitted developments in the area identified in Chapter 1. For the purposes of this assessment of impacts a 'worst case' scenario has been assessed based on the projects stated in Chapter 1.

As referenced in the CEMP, the construction phase of the proposed development will be subject to strict mitigation and monitoring procedures. It is predicted that subject to the implementation of mitigation measures proposed, that the proposed development will result in no significant impacts relating to air quality, noise, vibration or traffic. Any negative impacts or nuisances experienced from construction activities which affect human health will be temporary/short term in nature.

13.6.2 Operational Phase

Once constructed, the proposed development will be permanent and non-reversible. It is considered that any negative cumulative impacts relating to human health factors including traffic, road safety, air quality, landscape and visual, water quality, noise and vibration will be offset by the delivery of an additional 544 no. residential units to the private and social housing stock of the area, retail unit, creche uses and pedestrian/cycle infrastructure upgrades which it is predicted to result in significant positive and permanent benefits in terms of wider human health considerations.

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CHAPTER 14 | Interaction of Impacts

This Chapter has been prepared by Harry Walsh, (BA HONS, Master of Regional and Urban Planning, MIPI), Director at HW Planning.

Article 3(1) of the EIA Directive states.

> *The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:*
>
> *(a) population and human health;*
>
> *(b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;*
>
> *(c) land, soil, water, air and climate;*
>
> *(d) material assets, cultural heritage and the landscape;*
>
> *(e) the interaction between the factors referred to in points (a) to (d).”*

Annex IV of the amended Directive states that a description of impacts should include:

> *“…the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the project”*

Table 14.1 as shown summarises the relevant interactions and interdependencies between specific environmental aspects.

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Table 14.1: Potential Interaction of Effects Matrix (Con = Construction, Op= Operational. If there is considered to be no potential for an effect, the box is left blank.)

Interaction	Landscape	Material Assets – Traffic & Transport	Material Assets – Services, Infrastructure & Utilities	Land & Soils	Water (Hydrology & Hydrogeology)	Biodiversity	Noise & Vibration	Cultural Heritage	Air Quality	Population & Human Health	Climate
Landscape		Op	Con & Op	Con & Op	-	Con	-	Con & Op	-	Con & Op	-
Material Assets – Traffic & Transport	Con & Op		Con	Con	-	Con	Con & Op	-	Con & Op	Con & Op	Con & Op
Material Assets – Services, Infrastructure & Utilities	Con & Op	Con		Con	Con	Con & Op	Con		-	Con & Op	-
Land, Soils & Geology	Con & Op	Con	Con		Con	Con	-	Con	Con	Con	Con
Water (Hydrology & Hydrogeology)	Con & Op	Con & Op	Con & Op	Con		Con & Op	-	-	-	Con	Con
Biodiversity	Con & Op	Con	Con & Op	Con	Con & Op		Con	-	Con	-	-
Noise & Vibration	-	Con & Op	Con	Con	-	Con		-	Con	Con & Op	-
Cultural Heritage	Con & Op	-	-	Con	-	-	-		-	-	-
Air Quality	Op	Con & Op	Con	Con	-	Con	Con	-		Con & Op	Con & Op
Population & Human Health	Con & Op	Con & Op	Con & Op	Con	Con & Op	-	Con & Op	-	Con & Op		Con & Op
Climate	Op	Con & Op	Con	-	-	Con	Con	-	Con & Op	Con & Op	

CHAPTER 15 | Summary of Mitigation & Monitoring Measures

The 2022 EPA Guidelines regarding information to be contained in EIAR's, identifies the following strategies for the mitigation of effects.

Mitigation by Avoidance: Avoidance, usually referring to strategic issues – such as site selection, site configuration or selection of process technology - is generally the fastest, cheapest and most effective form of effect mitigation. Environmental effects and the consideration of alternatives need to be taken into account at the earliest stage in the site / route selection and project design processes. For example, the realignment of a transport corridor to avoid residential property, avoid habitat destruction or to reduce agriculture severance, etc. In many situations, mitigation by avoidance may be viewed as part of the 'consideration of alternatives'.

Mitigation by Prevention: This usually refers to technical measures. Where a potential exists for unacceptable significant effects to occur (such as noise or emissions) then measures are put in place to limit the source of effects to a permissible and acceptable level. Examples include the specification of process technology standards or building design to minimise height or contrasts of materials. Prevention measures are also put in place to prevent the effects of accidental events from giving rise to significant adverse effects. The installation of a fire-water retention basin is an example of mitigation against such risk by prevention.

Mitigation by Reduction: This is a very common strategy for dealing with effects which cannot be avoided. It tends to concentrate on the emissions and effects and seeks to limit the exposure of the receptor. It is generally regarded as the 'end of pipe' approach because it tends not to affect the source of the problems. As such this is regarded as a less sustainable, though still effective, approach.

Mitigation by Offsetting: This is a strategy used for dealing with significant adverse effects which cannot be avoided, prevented or reduced. It includes measures to compensate for adverse effects.

For a comprehensive list of all proposed construction and operational phase mitigation measures, refer Chapter 15 of this EIAR, the individual EIAR chapters and corresponding appendices of this EIAR (Volumes II and III).

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