Castlelands LRD, Mallow

Non-Technical Summary (NTS)

Volume I

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McCutcheon Halley
CHARTERED PLANNING CONSULTANTS

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1 Introduction

Article 5(1)(e) of the EIA Directive requires the project proponent to include a Non-Technical Summary (NTS) of the Environmental Impact Assessment Report (EIAR) and it is transposed into Irish law under article 94(c) of the Planning and Development Regulations 2001, as amended. The term 'non-technical' indicates that this summary should not include technical terms, detailed data and scientific discussion, that detail is presented in Volume II, the EIAR.

This Non-Technical Summary provides a concise, but comprehensive description of the Project, its existing environment, the effects of the project on the environment, the proposed mitigation measures, and the proposed monitoring arrangements, where relevant. The NTS highlights any significant uncertainties about the project. It explains the development consent process for the Project and the role of the EIA in that process.

It is important to highlight that the assessments that form part of the EIAR were undertaken as an iterative process rather than a one-off, post-design environmental appraisal. Findings from the individual assessments have been fed into the design process, resulting in a project which achieves a 'best fit' within the environment.

The development description is set out in Section 2.1. In summary, the proposed Large Scale Residential Development will consist of the construction of 469 no. residential units, a creche, and all associated site development works.

1.1 Report Structure

The EIAR has been prepared according to the 'Grouped Format Structure'. This means that each topic is considered as a separate section and is drafted by the relevant specialists.

The EIAR is divided into three volumes as follows:

- Volume 1: Non-Technical Summary
- Volume 2: Main Environmental Impact Assessment Report
- Volume 3: Appendices

Volume 1, the Non-Technical Summary (NTS), provides an overview of the project and the EIAR in non-technical terms. The summary is presented similar to the grouped format structure and discusses each environmental topic separately.

Volume 2, the main EIAR, provides the detailed information on the proposed development and the relevant environmental topics, with technical and detailed investigations of the topic areas as appropriate. This volume is prepared in the grouped format structure as it allows specialist studies to be completed for environmental topics in chapters.

Volume 3, the Appendices, contains supporting documentation and information on the EIAR.

1.2 Screening for Environmental Impact Assessment

Development which falls within one of the categories specified in Schedule 5 of the Planning and Development Regulations 2001, as amended, which equals or exceeds, a limit, quantity, or threshold prescribed for that class of development must be accompanied by an EIAR.

The proposed development falls within the class of development types requiring an EIA under Schedule 5 of the Planning and Development Regulations 2001 (as amended). The proposed development is subject to Part 2 of this Schedule (Section 10) which deals with infrastructure projects where EIA is required for:

> *10. b (iv) Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectare 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).*

The proposed Large-Scale Residential Development (LRD) comprises the construction of 469 no. residential units, creche and ancillary/associated development on a gross site area of 18.2ha. An EIAR is therefore required as the LRD comprises urban development on a site area that exceeds the 10ha threshold for a mandatory EIAR.

1.3 Competency

It is a requirement that the EIAR must be prepared by competent experts. For the preparation of this EIAR, the Applicant engaged McCutcheon Halley Chartered Planning Consultants to direct and coordinate the preparation of the EIAR and a team of qualified specialists were engaged to prepare individual chapters. The consultant firms and lead authors are listed in **Table 1**. Details of competency, qualifications, and experience of the lead author of each discipline is outlined in the individual chapters.

Table 1 Chapters of EIAR & Contributors

Chapter	Aspect	Consultancy	Lead Consultant
1.	**Introduction**	McCutcheon Halley Planning Consultants	Saoirse Kavanagh
2.	**Site Location &Project Description**	McCutcheon Halley Planning Consultants	Saoirse Kavanagh
3.	**Alternatives Considered**	McCutcheon Halley Planning Consultants	Saoirse Kavanagh
4.	**Population & Human Health**	McCutcheon Halley Planning Consultants	Saoirse Kavanagh
5.	**Land, Soils & Geology**	Enviroguide Consulting	Gareth Carroll
6.	**Hydrology & Hydrogeology**	Enviroguide Consulting	Gareth Carroll

Chapter	Aspect	Consultancy	Lead Consultant
7.	**Air Quality**	AWN Consulting	Ciara Nolan
8.	**Climate Change**	AWN Consulting	Ciara Nolan
9.	**Noise & Vibration**	AWN Consulting	Dominic Wright
10.	**Landscape & Visual**	JBA Consulting	Christos Papachristou
11.	**Material Assets: Traffic & Transport**	PUNCH	Julie Tiernan
12.	**Material Assets: Service Infrastructure & Utilities**	DOSA	Stephen O'Grady
13.	**Biodiversity**	Enviroguide Consulting	Ciara Barry-Hannon
14.	**Cultural Heritage**	John Cronin & Associates	John Cronin
15.	**Significant Interactions**	McCutcheon Halley Planning Consultants	Saoirse Kavanagh
16.	**Summary of Mitigations & Monitoring**	McCutcheon Halley Planning Consultants	Saoirse Kavanagh
17.	**Screening for Major Accidents**	McCutcheon Halley Planning Consultants	Saoirse Kavanagh

1.4 Methodology

In preparing the EIAR the following regulations and guidelines were considered:

- The requirements of applicable EU Directives and implementing Irish Regulations regarding Environmental Impact Assessment, as cited in section 1.5above;
- Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Reports (European Commission, 2017)
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (Environmental Protection Agency, May 2022).
- Guidelines on Information to be Contained in Environmental Impact Statements (EIS) (Environmental Protection Agency, 2002)
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, 2018).

In addition, contributors have had regard to other relevant discipline-specific guidelines, these are noted in individual chapters of the EIAR.

Each chapter of this EIAR assesses the direct, indirect, cumulative, and residual impact of the proposed development for both the construction and operational stage of the proposed development.

The identified quality, significance, and duration of effects for each aspect is primarily based on the terminology set out in the EPAs Guidelines on the information to be contained in Environmental Impact Assessment Reports (2022) as summarised in the following table:

Table 2 Impact Rating Terminology

Quality of Effects	
Positive	A change which improves the quality of the environment (for example, by increasing species diversity; or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
Neutral	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
Negative/Adverse Effects	A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance).
Significance of Effects	
Imperceptible	An effect capable of measurement but without significant consequences.
Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment.
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound Effects	An effect which obliterates sensitive characteristics.
Duration & Frequency of Effects	
Momentary Effects	Seconds to minutes
Brief Effects	Less than 1 day
Temporary Effects	Less than 1 year
Short-term Effects	1-7 years
Medium-term Effects	7-15 years
Long-term Effects	15-60 years
Permanent Effects	Over 60 years
Reversible Effects	Effects that can be undone, for example through remediation or restoration.
Frequency of Effects	Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually).
Extent & Context of Effects	
Extent	Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.
Context	Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)

Probability of Effects	
Likely	The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
Unlikely	The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Type of Effects	
Indirect Effects	Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.
Cumulative Effects	The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects.
Do Nothing Effects	The environment as it would be in the future should the subject project not be carried out.
Worst-case Effects	The effects arising from a project in the case where mitigation measures substantially fail.
Indeterminable Effects	When the full consequences of a change in the environment cannot be described.
Irreversible Effects	When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.
Residual Effects	The degree of environmental change that will occur after the proposed mitigation measures have taken effect.
Synergistic Effects	Where the resultant effect is of greater significance than the sum of its constituents, (e.g. combination of SOx and NOx to produce smog).

1.5 Consultation

The following prescribed bodies were consulted in relation to the general scope of the EIAR.

- Department of Housing, Local Government, and Heritage
- Department of Tourism, Culture, Arts, Gaeltacht, Sport & Media
- Department of Education
- Geological Survey Ireland (Department of the Environment, Climate and Communications)
- The Heritage Council
- Office of Public Works (OPW)
- Transport Infrastructure Ireland (TII)
- The National Transport Authority (NTA)
- The Health and Safety Authority (HSA)
- The Health Service Executive (HSE)
- Inland Fisheries Ireland
- Bat Conservation Ireland
- Uisce Éireann
- An Taisce
- Bord Gais
- ESB
- Environmental Protection Agency
- Fáilte Ireland

Responses received are included in Appendix 1.1, within Volume III of this EIAR.

2 Site Location and Project Description

According to the EIA Directive, an EIAR must provide a project description that includes information on the project's site, design, scale, and other relevant elements. The 2014 Directive stipulates in Recital 22 that:

> *"In order to ensure a high level of protection of the environment and human health, screening procedures and environmental impact assessments should take account of the impact of the whole project in question, including, where relevant, its subsurface and underground, during the construction, operational and, where relevant, demolition phases".*

Chapter 2 of Volume II complies with the EIA Directive's criteria by giving information about the proposed project's location, size, and features.

2.1 Description of Existing Environment

The subject site is located within the townland of Castlelands, to the east of, and within the defined development boundary of, Mallow, Co. Cork.

Figure 1 Application Site

2.2 Proposed Development

The proposed development consists of

- 469 no. residential units comprising 305 no. houses and 164 no. duplex/apartments.
- A 788.6sqm creche providing 122 no. childcare spaces.

- The redevelopment of the existing gate lodge to provide an interpretive centre and café.
- Landscaping and boundary treatments.
- The provision of wastewater treatment system.
- All associated site development works.

3 Alternatives Considered

The Planning and Development Regulations, 2001, as amended, require:

> *"A description of the reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed development on the environment."*

The requirement is elaborated at paragraph 2(b), which makes clear that reasonable alternatives may include project design proposals, location, size and scale, which are relevant to the proposed development and its specific characteristics. The Regulations require that an indication of the main reasons for selecting the preferred option, including a comparison of the environmental effects be presented in the EIAR.

The Environmental Protection Agency (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports states:

> *"The objective is for the developer to present a representative range of the practicable alternatives considered. The alternatives should be described with 'an indication of the main reasons for selecting the chosen option'. It is generally sufficient to provide a broad description of each main alternative and the key issues associated with each, showing how environmental considerations were taken into account in deciding on the selected option. A detailed assessment (or 'mini-EIA') of each alternative is not required."*

The Guidelines also state that the range of alternatives considered may include the 'do-nothing' alternative.

Accordingly, this chapter of the EIAR provides an outline of the main alternatives examined during the design phase. It sets out the main reasons for choosing the development as proposed, taking into account and providing a comparison on the environmental effects. The assessment of alternatives is considered under the following headings;

i. Do Nothing Alternative
ii. Alternative Locations
iii. Alternative Uses
iv. Alternative Project Design (4 no. alternative scenarios)
v. Alternative Processes

3.1 Do-Nothing Alternative and Alternative Locations

The Do-Nothing Alternative would see this residential zoned site remain an undeveloped greenfield site adjacent to the existing Castlepark housing development. The Do- Nothing Alternative would not help Mallow achieve its population and housing targets identified in the Cork County Development Plan 2022-2028.

The selected location is considered the most suitable location for the proposed development.

3.2 Alternative Uses

The proposed development is located in the townland of Castlepark within the town of Mallow, Co. Cork, which is zoned for residential development in the Cork County Development Plan 2022-2028.

The Development Plan notes that these areas are intended primarily for housing development but may also include uses such as creches, schools, nursing homes or homes for older people, open space, recreation and amenity uses.

Therefore, the proposed residential development, which includes a creche, is considered an appropriate use for the subject site.

3.3 Alternative Processes

Due to the nature of the proposed development (i.e. a residential development which includes amendments to parts of a permitted large scale residential development), the only option is to submit a Large-Scale Residential Development planning application to Planning Authority. Therefore, there is no alternative process to consider.

3.4 Alternative Design (including size & scale)

The layout of the proposed development went through a detailed design process with input from Cork County Council and the entire applicant's design team and the EIAR team.

Four alternative layouts (Alternatives A to D) were considered and presented to Cork County Council before the final layout (Alternative E) was developed. These five layouts are discussed in detail in Chapter 3 of Volume II. An overview of the key statistics for each alternative is provided in the table below.

Table 3 Overview of Alternatives

Statistic	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Net Site Area	13ha	12.94ha	12.9ha	12.9ha	12.7ha
Total No. Units	430 no.	429 no.	429 no. units	463 no. units	469 no. units
No. Houses	330 no. (77%)	333 no. (77%)	341 no. (79.5%)	291 no. (62.9%)	305 no. (65%)
No. Apartments	100 no. (23%)	96 no. (23%)	88 no. (20.5%)	172 no. (37.1%)	164 no. (35%)
Creche Spaces	125 no.	125 no.	122 no.	122 no.	122 no.
Retail	400sqm	330sqm	0sqm	0sqm	0sqm

Office	**400sqm**	**413sqm**	**0sqm**	**0sqm**	**0sqm**
Density	**33uph**	**33.1uph**	**33.2uph**	**35.9uph**	**36.9uph**
Open Space	**1.82ha (14%)**	**1.94ha (15%)**	**15.3%**	**15.5%**	**17.5%**

4 Assessment of Environmental Impacts

4.1 Population & Human Heath

The assessment of Population and Human Health is contained within Chapter 4 of Volume II.

This chapter of the EIAR was prepared by Saoirse Kavanagh and Aida Vaisvilaite of McCutcheon Halley Planning Consultancy and assesses the potential impacts of the proposed development on population and human health that are not covered elsewhere in the EIAR. It also details the proposed mitigation measures where necessary.

The appraisal of the likely significant effects of the proposed development on population and human health was conducted by reviewing the current socio-economic environment in the EIAR study area. This comprised site visits and visual assessments of the proposed site and the surrounding area, as well as an analysis of aerial photography and Ordnance Survey (OS) mapping.

4.1.1 Impact Assessment

In identifying potential impacts and receptors, consideration was given to the proposed residential scheme and the identified receiving environment. The principal potential receptors that will be affected by the development proposal have identified in the following sections:

- Residential Areas in Proximity;
- Community Facilities and Services, including schools and creches;
- Local Amenity;
- Economic Activities.

4.1.2 The 'Do Nothing' Scenario

If the development were not to proceed there would be no immediate impact on the existing population, economic activity, or community services and facilities in the town. However, if the development does not occur there will be a shortfall in housing supply in the area which may negatively impact the continued sustainable growth of the town. The site is zoned for residential development and the provision of housing on the subject site will support the core strategy and objectives of the Cork County Development Plan. If the development does not occur the zoning and objectives of the local planning policy will not be realised in the short term.

4.1.3 Construction Phase Impacts

The construction of the proposed development is expected to be completed within 96 months. The potential impacts arising during the construction phase relate to short term impacts to quality of life, including visual impact/amenity, noise, air quality, and transport. The construction phase is

anticipated to result in a temporary boost to the local economy as workers employed at the site can be expected to make use of local retail facilities and other services. As with any construction site, there will be potential risk to health and safety in terms of injury or death of construction personnel on-site due to the usage of large, mobile machinery as well as heavy equipment and materials.

4.1.4 Operational Phase

Due to the nature of the development, there will be few hazards associated with the operational phase of the project and therefore no potential significant negative impact in terms of health and safety. The proposed development is projected to provide an additional population of c. 1,364 no. people. The local creches, schools and facilitates have been found to have sufficient capacity to cater for this increase in population.

4.1.5 Construction Phase Mitigation

Health and safety risks are the primary concern during the construction phase. These will be managed in accordance with Safety, Health, and Welfare at Work (Construction) Regulations, 2013. The design of the proposed development will be subject to safety design reviews to ensure that all requirements of the project are safe. A project supervisor for construction stage (PSCS) will be appointed and a contractor safety management program will be implemented to identify potential hazards associated with the proposed works. When issues are identified, corrective actions will be implemented to amend design issues prior to the issuance of final design for construction. Temporary contractor facilities and areas under construction will be fenced off from the public with adequate warning signs of the risks associated with entry to these facilities. Entry to these areas will be restricted and they will be kept secure when construction is not taking place. Site lighting and camera security may be used to secure the site, and any lighting will be set up with consideration of the adjoining property. Measures to ensure public safety, with respect to construction traffic and the construction phase have been included in the be included in the Construction and Environment Management Plan (CEMP) and outline Construction Traffic Management Plan (OCTMP) submitted with the application. A final CEMP and CTMP will be agreed with the Planning Authority prior to commencement of development. Mitigation measures have been proposed by other disciplines within this EIAR. A summary of these measures is provided in Chapter 16 of Volume II.

4.1.6 Operational Phase Mitigation

Measures to avoid potential negative impacts on Population and Human Health have been fully considered in the design of the project and are integrated into the final layout and design. Compliance with the layout and design will be a condition of the permitted development. As such no mitigation measures are required.

Mitigation measures have been proposed by other disciplines within this EIAR. A summary of these measures is provided in Chapter 16 of Volume II.

4.2 Land, Soils & Geology

The assessment of Land & Soils is contained within Chapter 5 of Volume II.

An assessment of the potential impact on the existing land, soil and geological environment was carried out by Enviroguide Consulting.

The assessment was carried out taking cognisance of the appropriate national guidelines and standards for Environmental Impact Assessment using data collected from a detailed desk study, the Site walkover undertaken in December 2023 and July 2024 and the PGL site investigation completed in February 2024 and review of all relevant drawings and documents pertaining to the site and the Proposed Development. A detailed assessment of the potential impacts was undertaken, and appropriate avoidance and mitigation measures were identified to reduce any identified potential impact associated with the Proposed Development.

The construction phase of the Proposed Development will require the excavation of 51366m^3 of soil (17,189m^3 topsoil and 34,177m^3 subsoil). It is intended to reuse approximately 15,869m^3 of suitable excavated subsoil for landscaping and engineering use. However, it is estimated that approximately 35,497m^3 of excavated soil (17,189m^3 topsoil and 18,308m^3 subsoil) will require removal offsite in accordance with all statutory legislation.

The construction of the Proposed Development will also require the importation of aggregate fill materials for use as granular material beneath road pavement, under floor slabs and for drainage and utility bedding / surrounds.

During the Construction Phase, all works will be undertaken in accordance with the Construction Environmental Management Plan (CEMP) (Enviroguide Consulting, 2024a) and a preliminary Resource Waste Management Plan (RWMP) (Enviroguide Consulting, 2024b). Following appointment, the contractor will be required to implement the measures set out CEMP and RWMP to provide detailed construction phasing and methods to manage and prevent any potential emissions to ground with regard to the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA-C532', CIRIA, 2001). The CEMP and RWMP will be implemented for the duration of the Construction Phase, covering construction and waste management activities that will take place during the Construction Phase of the Proposed Development.

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

- Control and Management of Earthworks.
- Control and Management of Soils, Subsoils and Stockpiles.
- Management and Control Procedures for the Exportation of Surplus Soils and Subsoils.
- Management and Control Procedures for the Importation of Aggregates and Materials.
- Control and Handling of Cementitious Materials.
- Control and Handling of Fuel and Hazardous Materials.
- Accidental Release of Contaminants.

There will be no excavation of soil or bedrock or infilling of waste during the Operational Phase of the Proposed Development as a mixed use residential and retail / commercial development.

The Site is approximately 18.2ha. The Proposed Development will require land take of approximately 12.7ha and will change from undeveloped lands to residential and retail / commercial land use with associated vehicular and pedestrian access, car parking landscaping.

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

4.3 Hydrology & Hydrogeology

The assessment of Hydrology & Hydrogeology is contained within Chapter 6 of Volume II.

An assessment of the potential impacts on the existing hydrological and hydrological environmental was carried out by Enviroguide Consulting.

The assessment was carried out taking consideration of appropriate national guidelines and standard for the Environmental Impact Assessment using data collected from detailed desk study, the Site walkover undertaken in December 2023 and July 2024 and the PGL site investigation completed in February 2024 and review of all relevant drawings and documents pertaining to the Proposed Development and site. The results of the assessment provided information on the baseline conditions at the site. A detailed assessment of the potential impacts was undertaken, and appropriate avoidance and mitigation measures were identified to reduce any identified potential impact associated with the Proposed Development.

The Site is mapped by the EPA (EPA, 2024) as within the Blackwater (Munster) WFD Catchment (Catchment I.D.: 18), the Blackwater [Munster]_SC_090 WFD Sub-catchment (Sub-Catchment ID 18_21) and the Blackwater [Munster]_140 WFD River Sub-basin (EU Code: IE_SW_18B021720) (EPA, 2024). The closest EPA mapped (EPA, 2024) surface waterbody to the Site is the Blackwater [Munster] River (River Waterbody Code: IE_SW_18B021720) located approximately 0.08km south of the Site.

The EPA (EPA, 2024) maps the groundwater body (GWB) beneath the Site as the Mitchelstown GWB (EU Code: IE_SW_G_082). The GWB descriptor for the Mitchelstown GWB (GSI, 2024) notes that the Mitchelstown GWB occupies an area of 549m2 across Co. Cork and Co. Limerick. Groundwater flow in the vicinity of the Site is considered likely to be in a southerly direction towards the Blackwater [Munster] River.

The site-specific flood risk assessment (SSFRA) developed for the site and proposed development (Arup, 2024 submitted with the planning application) identifies that the majority of the proposed development site is located in Flood Zone C, an area with a low risk of flooding (less than 0.1% Annual Exceedance Probability - AEP). However, small parts of the site at the southern boundary are within Flood Zone A. The proposed use for this area includes open space and footpaths, which are water-compatible uses and therefore appropriate for development in Flood Zone A. The SSFRA concludes that the proposed development is appropriate for the site. Given the design of the proposed development, including footpaths located within Flood Zone A that do not alter existing levels and are made from permeable materials, no mitigation is required.

Surface water at the Proposed Development will be managed in accordance with the principals and objectives of Sustainable Drainage Systems (SuDS) and the Greater Dublin Sustainable Drainage System (GDSDS) to treat and attenuate water before discharging at greenfield runoff rates to the existing surface water drainage network located in the adjoining Castle Park residential estate and ultimately the Blackwater [Munster] River.

Foul water from the Proposed Development will discharge to the existing UE foul sewer, located in the adjacent Castle Park residential estate to the west of the Site. The UE CoF letter dated the 25th of September 2024 (UE COF Reference: CDS22002703) confirms that the wastewater connection is feasible without infrastructure upgrade by UE. Foul water from the Proposed Development will be treated at the Mallow WWTP (EPA Licence No. D0052-01) before ultimately discharging to Blackwater [Munster] River (EU Code: IE_SW_18B021720).

Water supply to the Proposed Development will be from the existing UE watermain, located in the adjacent Castle Park residential estate to the west of the Site, in accordance with the requirements from the UE CoF letter dated the 25th of September 2024 (UE COF Reference: CDS22002703). The UE CoF letter states that the water supply connection is feasible without infrastructure upgrade by UE

During the Construction Phase, all works will be undertaken in accordance with the Construction Environmental Management Plan (CEMP) (Enviroguide Consulting, 2024a) and the Resource Waste Management Plan (RWMP) (Enviroguide Consulting, 2024b). Following appointment, the contractor will be required to implement the measures set out CEMP and RWMP to provide detailed construction phasing and methods to manage and prevent any potential emissions to ground with regard to the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA-C532', CIRIA, 2001). The CEMP and RWMP will be implemented for the duration of the Construction Phase, covering construction and waste management activities that will take place during the Construction Phase of the Proposed Development.

These measures will address the main activities of potential impact which include:

- Control and Management of water and surface runoff.
- Control of Management of works nears water courses.
- Management and control of soil and materials
- Control of Management of materials from offsite sources.
- Appropriate fuel and chemical handling, transport and storage.
- Management of accidental release of contaminants at the site.
- Control and handling of cementitious materials

During the operational phase ongoing regular maintenance of the proposed drainage including the sustainable drainage systems measures in accordance with CIRIA SuDS Manual C753 will be incorporated into the overall management strategy for the Proposed Development.

Overall, there will be no impact to the existing Water Framework Directive Status of water bodies associated with the Proposed Development including the Blackwater [Munster] River and the Mitchelstown groundwater body as a result of the Proposed Development taking account of design avoidance and mitigation measures where required.

4.4 Air Quality

The assessment of Air Quality is contained within Chapter 7 of Volume II.

AWN Consulting Limited conducted an assessment of the likely impact on air quality associated with the proposed residential development at Castlelands, Mallow, Co. Cork.

4.4.1 Baseline 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 National and European Union (EU) ambient air quality standards.

4.4.2 Potential Impact of the Proposed Development

Construction Phase

An assessment of the potential dust impacts as a result of the construction phase of the proposed development was carried out based on the UK Institute for Air Quality Management 2024 guidance document *'Guidance on the Assessment of Dust from Demolition and Construction'*. This established the sensitivity of the area to impacts from construction dust in terms of dust soiling of property, human health effects and dust-related ecological effects. The surrounding area was assessed as being of high sensitivity to dust soiling and dust-related ecological effects 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 three distinct categories: earthworks, construction and trackout (movement of vehicles) in order to determine the mitigation measures necessary to avoid significant dust impacts. It was determined that there is a high risk of dust related impacts associated with the proposed development. In the absence of mitigation there is the potential for ***direct, short-term, localised, negative, slight*** and ***not significant*** impacts to air quality.

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

Operational Phase

Operational phase traffic has the potential to impact air quality due to vehicle exhaust emissions as a result of the increased number of vehicles accessing the site. Operational stage traffic emissions were calculated at representative worst-case receptors in the area and it was determined that concentrations of 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, negative*** and ***not significant*** impact on air quality.

4.4.3 Mitigation and Residual Effects (Post-Mitigation)

Construction Phase

Detailed dust mitigation measures are outlined within Section 7.9.1 of Chapter 7 to ensure that no significant nuisance as a result of construction dust emissions occurs at nearby sensitive receptors. Once these best practice mitigation measures, derived from the Institute for Air Quality Management 2024 guidance '*Guidance on the Assessment of Dust from Demolition and Construction*' as well as other relevant dust management guidance, are implemented the impacts to air quality during the construction of the proposed development are considered, ***short-term, direct, negative*** and ***not significant***, posing no nuisance at nearby sensitive receptors (such as local residences).

Operational Phase

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

4.4.4 Cumulative Impact of the Proposed Development

Construction Phase

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

The dust mitigation measures outlined in Section 7.9.1 of Chapter 7 will be applied during the construction phase which will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the proposed development and the permitted cumulative developments are deemed ***short-term, localised, negative*** and ***not significant.***

Operational Phase

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

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

4.5 Climate Change

The assessment of Climate is contained within Chapter 8 of Volume II.

AWN Consulting Limited has been commissioned to conduct an assessment of the likely impact on climate associated with the proposed residential development at Castlelands, Mallow, Co. Cork.

4.5.1 Baseline Environment

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with European Union's Effort Sharing Decision "EU 2020 Strategy" (Decision 406/2009/EC). The EPA state that Ireland had total GHG emissions of 60.6 Mt

CO_2e in 2023. This is 2.27 Mt CO_2e higher than Ireland's annual target for emissions in 2023. EPA projections indicate that Ireland has used 63.9% of the 295 Mt CO_2e Carbon Budget for the five-year period 2021-2025. Further reduction measures are required in order to stay within the budget requirements.

4.5.2 Potential Impact of the Proposed Development

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

Greenhouse Gas Assessment

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

GHG emissions during the operational phase due to road traffic were assessed. The changes in traffic volumes associated with the operational phase of the development were substantial enough the meet the assessment criteria requiring a detailed climate modelling assessment, as per Transport Infrastructure Ireland (TII) 2022 guidance "*PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document"*. There will be a slight increase in the traffic on the local road network which will result in some minor increases in CO_2 emissions. These have been assessed as a small fraction of Ireland's transport sector 2030 emissions ceiling.

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

Climate Change Risk Assessment

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

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

4.5.3 Mitigation and Residual Effects (Post-Mitigation)

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

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

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

4.5.4 Cumulative Impact of the Proposed Development

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

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

4.6 Noise & Vibration

The assessment of Noise & Vibration is contained within Chapter 9 of Volume II.

AWN Consulting Limited has been commissioned to conduct an assessment of the likely impact of noise and vibration associated with the proposed residential development at Castlelands, Mallow, Co. Cork.

4.6.1 Baseline Environment

The baseline environment was quantified by undertaking environmental noise surveys, the results of which are presented within Chapter 9. The baseline noise surveys determined that the noise environment was largely dominated by residential noise from neighbouring residential developments, distant road traffic and intermittent aircraft noise. Other sources of noise noted were in relation to the existing wastewater treatment plant to the south of the site.

4.6.2 Potential Impact of the Proposed Development

Construction Phase

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

- Site Strip Clearance and Ground Preparation Works
- General Construction

Without mitigation the worst-case effect of the construction phase will be temporary to short term, negative and significant to very significant.

Operational Phase

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

- Mechanical Plant and Services
- Additional Traffic on Public Roads

The noise impacts relating to mechanical plant and services are likely to be neutral, not significant and long-term if guidelines and recommendations within the EIAR chapter are followed. The noise impacts relating to Additional Road Traffic on Public Roads will be long term, negative and not significant.

4.6.3 Mitigation and Residual Effects (Post-Mitigation)

Construction Phase

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

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

After mitigation, it is anticipated that the residual worst-case effect of the construction phase noise will remain temporary to short-term, negative, and significant to very significant. However, it is important to note that this worst-case residual effect will occur at certain NSLs highlighted within the noise and vibration chapter, which are closest to the construction work areas related to the various phases of construction. For most of the construction periods, construction works will be further from NSLs, resulting in a lower impact. It is also important to note that construction activities are inherently transient, meaning noise intrusive works will only affect the nearest NSLs for brief periods.

Operational Phase

Mitigation measures to be implemented during the operational phase are discussed within the full EIAR these measures mainly relate to the selection of quiet plant as well the suppression of break out noise from items of mechanical plant, where required for apartment buildings. The residual

operational noise impact in relation to the mechanical plant and services noise will be neutral, not significant and long term.

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

4.6.4 Cumulative Impact of the Proposed Development

Construction Phase

Cumulative noise impacts in relation to construction noise are unlikely to occur due to the scale of the proposed development with construction noise associated with the development likely to dominate the surrounding noise environment. The noise contribution of other sites would need to be equal to those associated with the proposed development in order to result in any cumulative effect.

Operational Phase

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

4.7 Landscape & Visual Impact

The assessment of Landscape & Visual Impact is contained within Chapter 10 of Volume II.

4.7.1 Methodology

The assessment is based on the recommendations in the Guidelines for Landscape and Visual Impact Assessment (GLVIA) as published by the Landscape Institute (UK) and the Institute of Environmental Management and Assessment (3rd Edition, 2013)[1], the guidelines from the Landscape Character Assessment (LCA) and Landscape and Visual Impact Assessment (LVIA) of Specified Infrastructure Projects - Overarching Technical Document[2] and Proposed National Roads - Standard[3]. The assessment also considers the landscape character assessment within the Cork County Development Plan 2014 – 2020.

The LVIA in the EIAR was carried out in October 2024 and took into consideration aerial photography, emerging design drawings, relevant publications and reports, together with visits to the site and environs of the proposed development. Verified photomontages in accordance with the GLVIA guidance were also considered to facilitate the assessment of visual impacts. A walkover site visit was undertaken of the proposed development site and visual receptors to the north, northeast, and

[1] Landscape Institute and Institute of Environmental Management & Assessment, 2013. Guidelines for Landscape and Visual Impact Assessment 3rd Edition. Routledge

[2] TII Publications, December 2020. *Landscape Character Assessment (LCA) and Landscape and Visual Impact Assessment (LVIA) of Specified Infrastructure Projects - Overarching Technical Document*, PE-ENV-01101

[3] TII Publications, December 2020. *Landscape Character Assessment (LCA) and Landscape and Visual Impact Assessment (LVIA) of Proposed National Roads - Standard*, PE-ENV-01102

southeast on the 20/02/2024. The locations for the photomontages have been agreed following liaison with the local planning authority. The desk studies involved assessment of satellite imagery, Google Street View, historic and ordnance survey mapping, background search of the relevant policies from the local council and analysis of the Zone of Theoretical Visibility (ZTV).

Potential impacts on the landscape and visual amenity resulting from the proposed development were assessed through a criteria considering landscape character sensitivity, magnitude of likely impacts, significance of landscape effects.

4.7.2 Receiving Environment

The proposed development includes the construction of 469 no. residential units, a creche, an interpretive centre/café, and all associated site development works

The proposed development site is situated east of the town centre of Mallow. Castlelands estate to the west and College Wood estate to the south are residential developments having completed construction within the last 20 years. The rural landscape of Mallow has been transformed to that of a vibrant urban centre. The proposed development aims to also open a corridor into the Blackwater River Corridor which has influenced the settlement and development pattern of Mallow. The receiving environment is composed of both visual receptors such as residents, people travelling along the Blackwater River route, and people travelling along existing pathways near the development. This also includes physical elements such as open space, vegetation and the Mallow town centre.

4.7.3 Potential Effects

4.7.3.1 Construction Phase

The proposed development will alter the landscape fabric within the boundaries of the site as well as sections of existing wooded areas such along the Blackwater where tree removal is expected to be required to accommodate the proposed walkway. Visual change upon the views will also include the addition of temporary welfare units and machinery. No substantial temporary visual impact is expected during construction phase, as existing hoarding surrounding receptors closer to the proposed development will continue screening the majority of the construction activity. Visual impact is expected to be moderate at highest.

4.7.3.2 Operational Phase

During the operational phase the surrounding receptors are expected to be affected moderately. The replacement of open wide space allowing for long ranging views into the river with new residential properties is expected. During the operational phase the receptors in the direct vicinity of the proposed development are expected to be moderately affected by the change in their views. The newly established vegetation will help soften the impact of the more urbanised landscape. Visual impact is expected to be moderate at highest.

4.7.4 Mitigation Measures

4.7.4.1 Construction Phase

While no substantial visual impact is expected during construction phase, it is recommended to improve and maintain the existing hoarding surrounding receptors R0 and R1 adjacent to the proposed development to further soften the visual impact during construction phase. This improved hoarding should come in the form of solid timber panels 2 to 2.5m in height allowing no viewing gaps between them.

4.7.4.2 Operational Phase

No significant impacts are expected to derive from the operational phase of the proposed development; therefore, no mitigation measures are necessary.

4.7.5 Residual Impacts

The improved hoarding screening views towards the proposed development from public locations is expected to soften the visual impact during construction phase. The same hoarding is recommended to be retained in place to avoid the possibility of elevating the visual noise to the high sensitivity visual receptors in the vicinity of the proposed development.

4.8 Material Assets: Traffic & Transport

The assessment of Traffic and Transport is contained within Chapter 11 of Volume II.

The purpose of the chapter is to assess the impact of the Proposed Development on the surrounding road network and transport infrastructure (including pedestrian, cycling and transport facilities) on the Mallow Road network in Cork County.

Site visits and traffic assessment scoping with Cork County Council were undertaken. The assessment is based on the Traffic and Transport Assessment and Mobility Management Plan as well as the current relevant guidance documents.

Traffic surveys were undertaken on the surrounding road network. A Quality Audit (including a Stage 1 Road Safety Audit) was also completed.

The chapter was prepared by Julie Tiernan BE(Civil) (Hons) MSc CEng MIEI of PUNCH Consulting Engineers.

4.8.1 Existing Environment

4.8.1.1 Site Location

The site is located to the northeast of Mallow Town Centre and accessed via St Joseph's Road.

It is bordered by existing residential developments to the west and north, with open green fields surrounding it to the south and east, indicating a mixed land use of residential and agricultural properties in the vicinity.

4.8.1.1 Existing Road Network

St Joseph's Road is a two-way single carriageway with a wide footpath on both sides of the road in the residential development regions for the majority of the 2.2km road. There are no existing designated cycle lanes on the road. The speed limit on the road is 50 km/hr on the section near the site area and 80km/h on the section towards the Mallow Dublin Road (N72). Based on the October 2023 survey, the baseline Annual Average Daily Traffic (AADT) for the St Joseph's Road is approximately 7,400 with 3.9% Heavy Goods Vehicles (HGVs).

Kingsfort Avenue and Castlepark Avenue are two main access points to the proposed Castlelands LRD formed along St Joseph's Road. Based on the October 2023 survey, the baseline AADT for Kingsfort Avenue is approximately 2,300 with 1.2% HGVs and 3,400 with 1.9% HGVs for Castlepark Avenue.

The traffic surveys undertaken found that the mean morning peak hour traffic flow at the existing junctions surrounding the development generally occurred between 08:00 and 09:00 (AM). The evening peak hour flow was found to be between 17:30 and 18:30 (PM).

4.8.1.2 Existing Pedestrian Facilities

Existing pedestrian facilities are good in the vicinity of the site. They provide full connectivity to the surrounding roads.

4.8.1.3 Existing Cycling Facilities

Existing cycling facilities are poor in the vicinity of the Proposed Development site. Cyclists are not offered segregated facilities for their journeys.

4.8.1.4 Existing Public Transport Facilities

Existing public transport facilities are poor in the vicinity of the proposed development. The nearest bus stop is 1.6km (20 minutes' walk) away from the proposed site. The general area does not have a TFI Town Bus service and is primarily served by Bus Éireann.

Mallow is one of the best served towns in Ireland for rail services. The development is located just over 2km (less than a 30-minute walk) from Annabella Mallow Train Station, which will promote a convenient, attractive, and therefore a realistic alternative to use of the private car for longer distance commutes.

4.8.2 Impact Assessment

4.8.2.1 Do Nothing Scenario

If the proposed LRD does not proceed there would be no additional demand or loading on the existing road network other than the naturally growing baseline traffic figures on the existing road network.

4.8.2.2 Demolition and Construction Phase

Construction traffic travelling to the site will use the existing St. Joseph's Road to access the site. Overall, there will be a negative short-term not significant impact to local traffic during the construction phase.

4.8.2.3 Operational Phase

Residual impacts on the surrounding roads and traffic during the operational phase is considered to be a long-term neutral moderate impact. The volumes of traffic generated from the currently Proposed Development when compared to the baseline scenario will have a moderate effect on the road network traffic volumes.

Modelling results show that there will be increased congestion in the central parts of Mallow Town with and without the proposed development. The relative impact of the proposed development in the Design year 2041 is moderate (<10%) on the worst performing junction when compared to the background traffic.

4.8.2.4 Cumulative Impact

The proposed LRD is not likely to result in significant adverse impacts either alone or in combination with the existing planned or likely future projects.

4.8.3 Mitigation

4.8.3.1 Demolition & Construction Phases

Construction traffic travelling to the site will use the St Joseph Road for access.

The traffic volume associated with the construction phase is not considered to be excessive and will be spread out throughout the construction of the Proposed Development.

Deliveries to the development will involve an average of 1-2 HGVs per day with up to 4no. two-way HGV trips per day during earthworks.

Vehicle parking for construction personnel will be accommodated within the site. To the extent possible, personnel will also be encouraged to use public transport, and information on local transportation will be published on-site.

4.8.3.2 Operational Phase

The following mitigation measures are proposed for the operational phase of the proposed LRD with reference to Material Assets: Traffic and Transport:

1. Provision of bike parking spaces above minimum requirements, including dedicated cargo bike spaces.
2. Opting for fewer car parking spaces than the maximum allowed under the Cork County Council Development Plan. This reduction, coupled with initiatives promoting cycling as a viable alternative mode of transport, will significantly contribute to sustainability by diminishing reliance on private cars while fostering increased usage of more eco-friendly transportation options, notably cycling and bus services for commuting.
3. Enhancing pedestrian and cyclist connectivity within the development and its adjacent residential areas to public transport, the nearby River Walk, and public parks. This will be achieved through the construction of Part-M compliant links and improvements along the existing Greenway.
4. Establishing a 4m wide amenity route dedicated to cyclists throughout the development.

5. Installing four cycle priority crossings within the development as part of the aforementioned amenity route.
6. Undertaking improvement works on the existing pedestrian paths to the Town.
7. Ensuring all footpaths within the development adhere to Part M compliance standards, incorporating crossing points in accordance with DMURS and Traffic Management Guidelines.
8. Implementation of a number of initiatives and active monitoring within the development to promote modal change.
9. There is a significant opportunity to optimise the cycle times of signalised junctions. They are currently modelled with a 90 second cycle time to accurately reflect the existing scenario queuing. By increasing the cycle time to an acceptable 120 second cycle time, the modelled throughput on heavily congested approaches can be enhanced, which will also help to reduce queuing and improve overall traffic flow.
10. Phasing of the proposed development to allow for future infrastructure improvements to be implemented outside of the control of the applicant.

4.8.4 Residual Impact Assessment

There will be no residual impacts on the surrounding traffic and transportation during the construction phase.

The volumes of traffic generated from the currently proposed development will have a moderate effect on the road network traffic volumes and can be considered within the norms for urban developments.

4.8.5 Monitoring

4.8.5.1 Construction Phase

The contractor will be obliged to appoint a traffic liaison officer/traffic manager who will be involved in preparing the CTMP and to monitor the performance of the CTMP. The traffic liaison officer will be available to receive complaints, comments and queries about the traffic generated by the construction site and traffic issues associated with the site. Regular meetings will be held on-site to which with all relevant stakeholders will be invited. The traffic liaison officer/traffic manager will liaise with:

- Cork County Council including Elected Members
- An Garda Siochana
- Irish Rail
- Bus Eireann
- Other relevant statutory bodies
- Members of the community
- Adjacent contractors

The traffic liaison officer/traffic manager will be sufficiently senior in position and will be responsible for dealing with any complaints and remedying any non-compliance and developing solutions to prevent re-occurrence.

4.8.5.2 Operational Phase

There will be no monitoring requirements of the traffic and transport in the operational phase of the development.

4.9 Material Assets: Service Infrastructure & Utilities

The assessment of Service Infrastructure & Utilities is contained within Chapter 12 of Volume II.

This section of the EIAR summarises the aspects on the proposed development site in relation to Material Assets.

4.9.1 Existing Stormwater Infrastructure

There are existing stormwater connections to the River Blackwater to the south of the site serving the existing Castlepark estate which will be utilised for this proposed development.

4.9.2 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 in the adjacent Castlepark estate.

4.9.3 Existing Water Supply Infrastructure

From available water main records and liaison with Irish Water, there are existing public watermain networks within the existing Castlepark estate which will be extended into the site.

4.9.4 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.

4.9.5 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.

4.9.6 Stormwater

The proposed development will adhere to the requirements of Cork County 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.

4.9.7 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 Confirmation of Feasibility has been issued by Irish Water in relation to same.

4.9.8 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 Confirmation of Feasibility has been issued by Irish Water in relation to same

4.9.9 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.

4.9.10 Flood risk

A site-specific flood risk assessment for the site has been carried out and the sites current, low risk designation will be maintained following the development of the site.

4.10 Biodiversity

The assessment of Biodiversity is contained within Chapter 13 of Volume II.

This Biodiversity Chapter details the Ecological Impact Assessment (EcIA) of the Proposed Development, which assesses the potential effects of the Development works on habitats and species; particularly those protected by National and International legislation or considered to be of particular nature conservation importance. This describes the ecology of the Site and surrounding area, with emphasis on habitats, plants, and animals, and will assess the potential effects of the Construction and Operational Phases of the Proposed Development on these ecological receptors.

A detailed desk study, in combination with a suite of field surveys, was carried out regarding the Proposed Development. Field surveys included: habitat/flora (including invasive plants) surveys, mammal surveys, bird scoping surveys, and bat surveys. All surveys were carried out at the appropriate time of year, and no significant limitations were encountered in the preparation of this Chapter.

A total of 14 statutory designated sites/areas were considered to fall within the precautionary zone of influence (ZOI) of the Proposed Development. Three of these sites, namely

- the Blackwater River (Cork/Waterford) SAC 002170;
- Blackwater Valley (Ballincurrig Wood) pNHA 001793; and
- Blackwater Valley (Kilcummer) pNHA 001794)

are linked to the Proposed Development via likely hydrological pathways.

The potential impacts to the SAC are assessed in detail in the Appropriate Assessment (AA) Screening and Natura Impact Statement (NIS) that accompany this application under separate cover (Enviroguide, 2024a, 2024b. The pNHAs that are considered linked to the Proposed Development via hydrological pathways are those located downstream of the Site, along the Blackwater River. As such, any potential impacts on these pNHAs are assessed by proxy within the AA Screening and NIS. This conclusion is enabled by the similarities in the impact pathways (pollution of the Blackwater River) to important features for which all sites are designated.

The site is mostly made up of areas that have been allowed to revegetate after Site clearance works in 2022. These areas have evolved from bare ground to form dry meadow and grassland habitats over the majority of the Site. Areas of scattered trees and parkland are located to the south of the Site, and an old stone wall bounds the Site to the east/southeast. The Site adjoins an existing park area to the south with treelines and amenity grassland areas, alongside the Blackwater River.

Two invasive plant species were recorded on Site, namely Butterfly Bush (*Buddleia davidii*), and New Zealand Flax (*Phormium tenax*). Butterfly Bush was observed growing on areas of hardstanding/artificial surfaces to the west of the Site, while New Zealand Flax was observed growing behind a rear garden, to the west of the Site, just behind a dense willow tree canopy.

The Site is considered to hold some value to locally occurring bird species. A total of 24 bird species were recorded at the Site through several site visits, however breeding activity was relatively low with only one species considered likely to be breeding at the Site (Blackbird (*Turdus merula*)). Red listed bird species noted flying over or in adjacent habitats included Meadow Pipit (*Anthus pratensis)* and Yellowhammer (*Emberiza citronella)*.

Very limited suitable habitats for protected mammals such as badger (*Meles meles*) or otter (*Lutra lutra*) were noted on the Site. However, the Site does provide suitable foraging and commuting for badgers. Additionally, Blackwater River is likely to support otters. Small mammals may be present in the scrub and woodland areas, as well as grassland areas of the Site. Therefore, suitable precautionary measures and mitigation to protect these species have been included in this chapter.

The bat surveys and assessments conducted on Site in 2023 concluded that the Site itself is considered to be of negligible importance for bats. The existing buildings showed no signs of bat roosting during emergence surveys, and the Site lacks mature trees and commuting and foraging routes. The adjacent Blackwater River habitats are likely to support bat commuting and foraging, however the Proposed Development is not considered likely to have an impact on bats within these adjacent habitats as the lit residential areas are removed from the river by >150m.

No amphibians or reptiles were recorded on Site, however some suitable habitats were noted and as such a precautionary approach has been applied and suitable mitigation measures are outlined in this chapter to ensure protection of these species groups.

Potential impacts of the Proposed Development on local ecology were identified and can be summarised as potential Construction Phase impacts via accidental polluted surface water discharges

to Blackwater River and / or to the ground; increases in lighting, noise and dust emissions; habitat loss; and increased human activity within the Site. The Operational Phase is likely to introduce increased human activity within the adjoining parkland alongside the Blackwater River, likely impacts from increased lighting on any bats utilising the Site itself, and potential fragmentation of habitats impacting foraging and commuting behaviours of small mammals. No other negative impacts were identified as a result of the Operational Phase of the Proposed Development.

The integrated design features and mitigation measures recommended to address the above potential impacts include measures to determine level of mammal usage immediately prior to commencement of works (to ensure accuracy of information at the beginning of works), suppress noise and dust and limit pollutant runoff in surface water. These include measures detailed in the Construction Environmental Management Plan (CEMP) and NIS (Enviroguide, 2024b) accompanying this submission under separate cover (Enviroguide, 2024c).

The above timing of works must also take into account the breeding bird season, such that vegetation clearance occurs outside the period of March-August. Mitigation of impacts to species associated with the Blackwater River (Otter, invertebrates, and fish assemblage) is included in the measures detailed in the CEMP (Enviroguide, 2024c) and NIS (Enviroguide, 2024b).

The Landscape plan incorporates a number of measures such as Sustainable Urban Drainage Systems, which include attenuation ponds. The plan also includes wildflower meadows and an increase in arboreal habitats across the Site. Thus, a slight positive impact on the ecological value of the Site as a whole is anticipated after a period of establishment.

Enhancement measures recommended for the Site include the provision of amphibian and reptile habitats, bird boxes, swift bricks, bat boxes, wildflower meadows, insect hotels and unmanaged log piles. Additionally, a low intervention hedgerow management plan is recommended for the maintenance of any new hedgerows within the Proposed Development.

No significant cumulative impacts involving the Proposed Development and other developments were identified. In terms of residual impacts, the construction mitigation measures detailed in this Chapter, the NIS and the CEMP, along with the design features to be adopted to minimise adverse impacts to animals at the Site and within Blackwater River, will be sufficient to reduce any identified potential impact to KERs associated with the Site to 'not-significant'. It is considered that provided the mitigation measures proposed are carried out in full, there will no significant negative impact to any valued habitats, designated sites or species.

4.11 Cultural Heritage

The assessment of Cultural Heritage is contained within Chapter 14 of Volume II.

This chapter assesses the effects of the proposed development on the cultural heritage resource, including archaeological and architectural heritage as well as other elements of the cultural heritage resource. The recorded and potential cultural heritage resource within a study area encompassing the lands within the boundary of proposed development site and the surrounding lands extending for 500m in all directions, was reviewed during the desktop study in order to compile a comprehensive

cultural heritage baseline context. Location mapping of all identified cultural heritage constraints within the study area is presented within the chapter.

The proposed development site is located c. 580m outside the east end of the Zone of Archaeological Potential around the historic core of Mallow town, as designated by the National Monuments Service. There is one recorded archaeological site located within the boundary of the proposed development, and this comprises a levelled fulacht fia (CO033-090----). This archaeological site is currently located in a green area within an existing housing estate adjacent to the west side of the proposed development and will be preserved *in situ* within protective fencing during the construction of the proposed development. There are an additional 12 recorded archaeological sites located within the surrounding 500m study and a location map of their locations is provided within the chapter. One of these archaeological sites (ringfort C0033-012----) is located within a private third-party property adjacent to the eastern boundary of the proposed development. The Archaeological Survey of Ireland inventory descriptions for all of the archaeological sites within the study area are presented in Appendix 14.2.

There are no Protected Structures or buildings listed by the NIAH located within the proposed development site or the surrounding study area. In addition, the proposed development site is not located within, or adjacent to, an Architectural Conservation Area. An extant 19th century structure, which may comprise a former lodge building, is located within the southwest corner of the proposed development site. This building is currently boarded up and will be retained and converted into a café and interpretive centre as part of the proposed development. An assessment of potential effects and appropriate mitigation measures for proposed interventions to this building are provided in the chapter.

Field-walking inspections of the proposed development site revealed that much of the lands within its boundary were subject to extensive ground disturbance during site clearance works carried out as part of a housing development during the 2000s. A number of house foundations were also constructed within the site prior to that development halting. The potential for the presence of unrecorded, sub-surface archaeological remains within the proposed development site was, nonetheless, noted and a non-intrusive geophysical survey, under a licence issued by the National Monuments Service (NMS), of suitable undisturbed green field areas was carried out to inform this assessment. This survey did not reveal any sub-surface anomalies of archaeological potential within the proposed development site. A program of archaeological test trenching licensed by the NMS was also carried out as part of the assessment and this site investigation revealed nothing of archaeological significance. Full copies of these two phases of site investigations are presented in Appendices 14.4 and 14.5.

The construction and operational stages of the proposed development will have no predicted direct effects on any archaeological sites or designated architectural heritage structures. Nothing of archaeological significance was identified during the geophysical survey and test trenching investigations carried out as part of this assessment, which in combination with extensive ground disturbance carried out in the 2000s, indicates that there is low potential for the presence of unrecorded archaeological features within the proposed development site. As a precautionary measure, licensed archaeological monitoring of topsoil stripping works within the environs of fulacht fia (CO033-090----) and ringfort (C0033-012----) will be carried out by a suitably qualified archaeologist

during the construction phase. The locations of these monitoring areas are identified within the chapter.

No potential significant cumulative impacts on the cultural heritage resource were noted during an appraisal of the proposed development in combination other developments in the area.

No potential significant residual effects on the cultural heritage resource are predicted to arise as a result of the proposed development.

4.12 Description of Significant Interactions

Likely significant interactions are set out in Chapter 15 of the EIAR. In practice many impacts have slight or subtle interactions with other disciplines. During the preparation of this EIAR each of the specialist consultants engaged with each other with respect to the likely interactions between effects predicted as a result of the proposed development. Mitigation measures to alleviate identified likely significant effects address identified interactions. This approach meets with the requirements of Part X of the Planning and Development Act 2000, as amended, and Part 10, and schedules 5, 6 and 7 of the Planning and Development Regulations 2001, as amended.

5 Summary of Mitigation & Monitoring Measures

A key objective of the Environmental Impact Assessment process is to identify likely significant environmental impacts at the pre-consent stage and where necessary to propose measures to mitigate or ameliorate such impacts. Monitoring Measures must be incorporated in the Development Consent for a Project if the Project is likely to have significant adverse effects Article 8a of the EIA Directive, requires that monitoring measures proposed (if appropriate) should be included in the EIA Report.

Chapter 16 of Volume II of this EIAR provides a summary of the mitigation and monitoring measures proposed for each discipline throughout the EIAR.

It is proposed that the appointed contractor will develop a site-specific Construction and Environmental Management Plan (CEMP) prior to works commencing on-site. All the mitigation and monitoring measures proposed within the individual specialists' assessments will be incorporated into the plan.

6 Screening for Major Accidents

Chapter 17 Screening for Major Accidents provides a review of the characteristics of the proposed development and of the project location to consider accident scenarios.

6.1 Flood Risk

A desktop study of the flood risk associated with the subject site and proposed development was completed by ARUP Consulting Engineers.

In terms of fluvial flood risk, the majority of the site is within Flood Zone C which is at low risk of flooding. A small part of the site at the southern boundary is within Flood Zone A which is at high risk of flooding, however, the proposed use in this area is for open space and a pathway which are considered water compatible and therefore appropriate for Flood Zone A. All vulnerable development is above the extreme flood water level from the Blackwater River and therefore the risk of fluvial flooding is low and a justification test is not required.

In terms of pluvial flooding there are limited catchements upstream from the development site and as such no overland flows from outside would enter the site and cause risk of pluvial flooding.

In terms of groundwater risk, the GSI groundwater flooding maps do not indicate risk of flooding at the site and therefore the risk of groundwater flooding is considered low.

6.2 Seismic Activity

In Ireland, the principal seismic events have occurred along/ beyond the east, south-east and south of Ireland with seismic movements generally up to 2.9 Magnitude recorded on land with no large seismic events recorded in the immediate vicinity of the subject site.

6.3 COMAH/SEVESO Sites

The Seveso Directive (Directive 82/501/EEC, Directive 96/82/EC, Directive 2012/18/EU) was developed by the EU after a series of catastrophic accidents involving major industrial sites and dangerous substances.

There are 29 no. Seveso sites (14 no. lower tier and 15 no. upper tier) located Cork County Council administrative area.

There are no Seveso sites in close proximity to the proposed development. The closest to the subject site is the LPG Cylinder Filling Ltd which is a 'lower tier establishment' and is over 2km from the subject site within the Quartertown Industrial Estate, Mallow, Co. Cork. The activity on site is described in the HSA's 'Public Information on a lower-tier establishment as required by Regulation 25' as 'LPG production, bottling and bulk distribution' and is considered low risk i.e., the advice in the event of a major accident is that "*members of the public are advised to go indoors, stay in and tune to local radio*."

Given the low risk and 'lower tier' nature of LPG Cylinder Filing Ltd premises and the distance to the proposed development, it is not considered a concern for the proposed development at construction or operational phase.

6.4 Residual Impact Assessment

6.4.1 Construction Phase

No scenarios of concern have been identified during the construction phase. As such the predicted impact is considered to be short term, imperceptible and neutral.

6.4.2 Operational Phase

The proposed development is not located in an area prone to flooding or an area prone to seismic events or within close proximity to a COMAH/Seveso site. As such, these accident scenarios are not of concern.

Therefore, the impact is considered to be long term, imperceptible and neutral.

6.4.3 Cumulative Impact

Cumulative impacts are considered imperceptible and neutral.