Haggardstown LRD

Dundalk, Co. Louth

Non-Technical Summary (NTS)

Volume I

May 2025

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.

1.1 Brief Project Description

The development description is set out in Section 2. Briefly, the Applicant is seeking a 7 year permission for the development of:-

- 502 no. residential units comprising 1, 2, 3 and 4 bed units
- Creche facility with outdoor secure play area.
- Wastewater connection to Finnabair Crescent where it will discharge to the existing network and outfalls to the Coes Road Wastewater Station.
- New vehicular entrance off Blackrock road, incorporating a new bus stop, with pedestrian and cycle access also from Bother Maol.
- Associated landscaping, public open spaces, roads, cycleways, residents and visitor parking, drainage, public lighting etc. and all associated site and development works.
- To facilitate the proposed development, excavation, cut and fill, reprofiling of existing ground levels and removal of works completed under previously permitted SHD development (including the foundations for 5 no. houses) is required. The ruins of a former pumphouse will also be removed / demolished as part of the works and existing overhead electrical lines will be undergrounded.

1.2 Site Description

The site is located at Haggardstown and Marshes Upper, Dundalk, Co. Louth. It is located approximately 4km south of Dundalk and 1km north of Blackrock. The site is located south of Bóthar Maol and west of Blackrock Road (R172). It covers an area of approximately 17.60 ha. This is the principal site. The overall application site measures c. 18.54 ha including Blackrock Road and Tandy's Lane.

The principal site is greenfield and consists of two agricultural fields that are irregular in shape and contains hedgerow, trees, wall and scrub vegetation. The application site also includes lands in public ownership to provide for connections to public infrastructure and proposed works to R172 at the site entrance.

Finnabair Business Park is located to the north of the site, along with existing residential development. To the east, there are existing residential properties, along with the Blackrock Road (R172). There are existing residential properties to the south, while the Dundalk Golf Club is located to the west of the site.

The site is accessed from Bóthar Maol, with road frontage also onto Blackrock Road (R172). The R172 is a regional road with a footpath adjoining the site extending south to Blackrock Village and north to Dundalk.

Dundalk contains a wide variety of local services, including several supermarkets including Aldi, Tesco and Lidl. There are also several primary and secondary schools within Dundalk, along with essential services such as GP's, opticians and the Louth County Hospital. There are also numerous sports clubs including the Quay Celtic soccer club and the Dundalk Gaels GAA Club.

Blackrock also contains services including a veterinary clinic, the Blackrock Abbey Nursing Home, and the St. Francis National School.

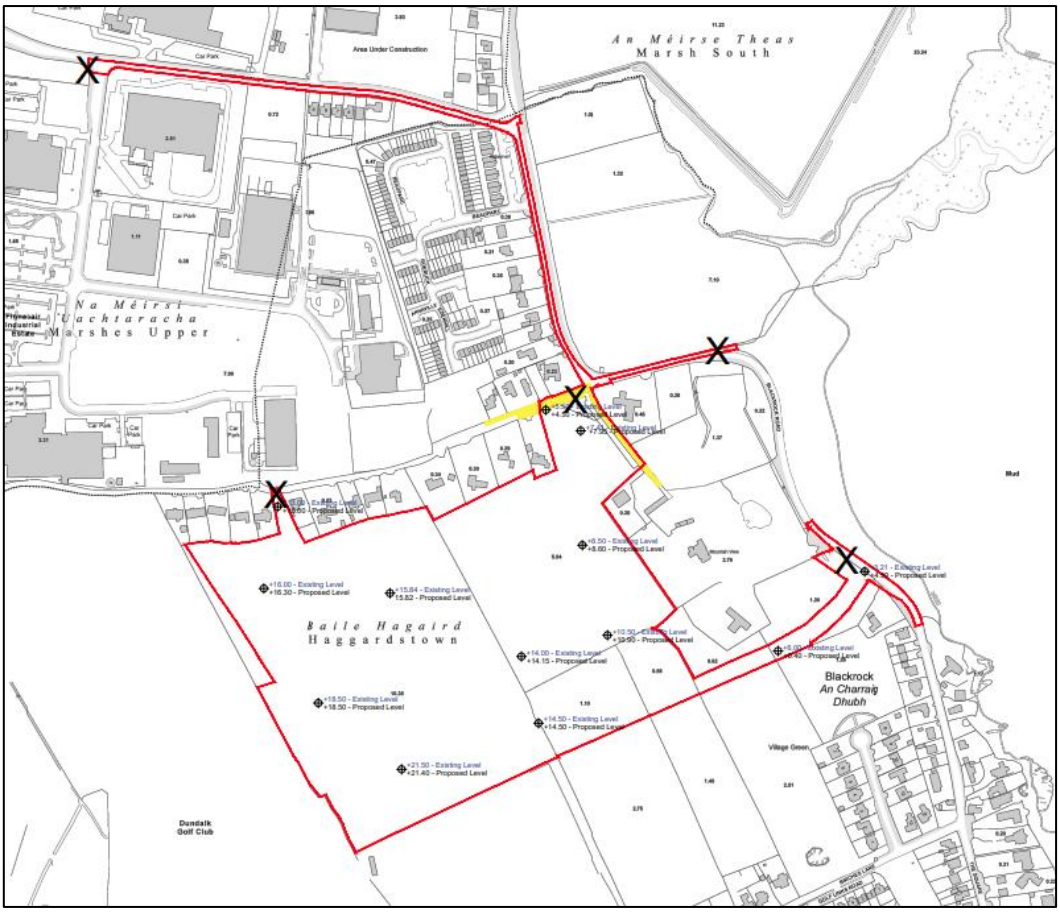

Figure 1-1 Site Location Map (Extract from JFA Drawing Pack, *Drg. No. P1000*)

1.3 Requirement for EIA

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 Environmental Impact Assessment Report (EIAR).

This development meets the threshold for a mandatory Environmental Impact Assessment as the development is greater than 500 housing units and upon a site greater than 10 hectares.

1.4 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 the Table below. Details of competency, qualifications, and experience of the lead author of each discipline is outlined in the individual chapters.

Table 1-1 Chapters of EIAR & Contributors

Chapter	Aspect	Consultancy	Lead Consultant
1	**Introduction**	McCutcheon Halley Planning Consultants	Louise O'Leary
2	**Development Description**	McCutcheon Halley Planning Consultants	Louise O'Leary
3	**Alternatives**	McCutcheon Halley Planning Consultants	Louise O'Leary
4	**Population & Human Health**	McCutcheon Halley Planning Consultants	Louise O'Leary
5	**Landscape & Visual**	Park Hood Landscape Architects	Andrew Bunbury
6	**Material Assets: Traffic & Transport**	Systra	Glen Moon
7	**Material Assets: Built Services**	DOBA Consulting Engineers	Alan Lambe
8	**Material Assets: Waste**	Enviroguide	Laura Griffin
9	**Land & Soils**	Enviroguide	Gareth Carroll
10	**Water & Hydrology**	Enviroguide	Gareth Carroll
11	**Biodiversity**	Enviroguide	Liam Gaffney
12	**Noise & Vibration**	Wave Dynamics	James Cousins
13	**Air Quality**	Enviroguide	Laura Griffin
14	**Climate**	AWN Consulting	Ciara Nolan
15	**Cultural Heritage**	IAC Archaeology	Faith Bailey
16	**Interactions of the Foregoing**	McCutcheon Halley Planning Consultants	Louise O'Leary
17	**Summary of Mitigation Measures**	McCutcheon Halley Planning Consultants	Louise O'Leary

1.5 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

- 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 1-2 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).

2 Project Description

2.1 Proposed Development

The proposed development is for the construction of 502 new homes and a creche, a Large Scale Residential Development, at Haggardstown and Marshes Upper , Co. Louth.

A 7 year permission is being sought for a Large-scale Residential Development (LRD) comprising 502 no. units and a creche facility.

In brief, the proposed development will consist of:-

- 502 no. residential units comprising 1, 2, 3 and 4 bed units in a mix of maisonettes, terraced and semi-detached units, with 1 no. detached bungalow unit. The total residential gross floor area is 51,440.5 sqm. The residential units are two and three storey in height, excluding the 1 no. bungalow.
- Two storey Creche facility (570.7 sqm Gross Floor Area) with outdoor secure play area.
- New Access off Blackrock Road incorporating a new bus stop, with 2 no. pedestrian and cycle access points from Bóthar Maol, and provision for future access to lands to south provided for.
- Infrastructure and services for the proposed development including surface water infrastructure, water mains and wastewater which will be pumped via a new rising main along Blackrock Road (R172) and Hardy's Lane to Finnabair Crescent where it will discharge to the existing wastewater drainage network.
- Associated public and private open space, landscaping and amenity areas including a large central park of c.2.7ha with public art, boundary treatments, public lighting, roads, cycleways, footpaths, car and cycle parking, infrastructure and services and all associated site and development works.
- To facilitate the proposed development, excavation, cut and fill, reprofiling of existing ground levels and removal of works completed under previously permitted SHD development including the foundations for 5 no. houses is required. The ruins of a former pumphouse will also be removed / demolished as part of the works and existing overhead electrical lines will be undergrounded.

2.2 Existing Structures

The site currently has no existing dwellings. In the northeast corner are the ruins of an old pump house and an existing container, both of which will be removed for the proposed LRD development. In December 2024, construction began under a previous SHD permission (ABP Ref. 304782), with access routes created and strip foundations dug and poured for five dwellings in the southeast.

2.3 Site Layout

The proposed layout aims to create a sustainable and thriving residential neighbourhood. Housing units will face the central open space and neighbourhood parks, which serve as focal points with

pedestrian and cyclist routes. Circulation follows the perimeter of the open space, with streets comprising circulatory routes and cul-de-sacs branching off the primary access route that loops around the central area. The dwellings are designed to maximise natural light and heat, and the street network minimises the number of north-facing rear gardens.

The creche is strategically located near the main entrance, featuring a secure outdoor play area and parking for staff and users.

The site is accessed from the east via Blackrock Road (R172), with two additional pedestrian and cycle entry points from Bóthar Maol. The main access also allows for future connectivity to adjacent lands.

The site is divided into six character areas with distinct materiality and landscape design to enhance the public realm and create a sense of place.

Figure 2-1 Proposed Layout – Principle Site (Extract from JFA Drawing Pack, Drg. No. P1004)

2.4 Units and Mix

The proposed development includes a total of 502 units, offering a variety of housing types. This mix consists of 40 one-bedroom maisonettes (apartments), 147 two-bedroom units, 277 three-bedroom units, and 38 four-bedroom units. The distribution is approximately 37% one and two-bedroom units, 55% three-bedroom units, and 7.5% four-bedroom units. These homes are available as maisonettes, detached, semi-detached, and terraced houses and are 2-3 storey in height excluding 1 no. bungalow.

The design allows for flexibility, enabling households to move within the development as their needs change. The principles of Universal Design have also been applied, with all units designed to be

accessible at ground floor level and more than 30% of units designed to be adaptable to meet the needs of residents through different stages of their life

2.5 Open Space

2.5.1 Public Open Space

The development includes 4.67 hectares of public open space, which is 26.6% of the principal site. with 1.56 hectares (11.8%) provided within the net developable site area . This exceeds the 10% minimum requirement set in the County Development Plan and in the the *Sustainable Residential Development and Compact Settlements Guidelines 2024*.

The various public open spaces proposed include;

- Central parkland spaces at A, B and part of C;
- Local Urban squares at F, G and H;
- Biodiversity corridor at E and J;
- Spill out spaces for crèche at C and D;
- Pedestrian and cycle connections onto Bóthar Maol at I and K.

The focal point of the strategy is the open space zoned lands in the centre of the site, generally comprising the proposed central open space and referred to as 'Loakers Park'. This park measures c.2.7ha.

Figure 2-2 Public Open Spaces (Extract from JFA, *Architectural Design Statement*)

2.5.2 Private Open Space

All dwellings are dual aspect and feature private rear gardens that meet or exceed the appropriate standards. Maisonettes also have private gardens at the rear. A 16-meter separation distance is maintained between opposing first-floor rear windows across the site and with neighbouring properties.

The design and layout maximise the number of units overlooking public open spaces. Garden orientation has been optimised where possible, with most north-facing gardens having south-facing frontages over public open spaces.

2.5.3 Retention of Hedgerows and Boundary Treatments

Where possible, existing hedgerows and boundaries of value are being retained and incorporated into the landscaping. A mix of boundary treatments is proposed in line with the standards set out in the County Development Plan, and taking into account the protection of existing hedgerows / boundaries through construction methodologies.

2.6 Childcare Facility

The proposed development features a two-storey crèche building situated in the southeast corner of the site, strategically located next to the new access road leading to Blackrock Road (R172). The crèche has a gross floor area of 570.7 sqm and includes a large, secure outdoor play area of 813 sqm. It is fully accessible and can accommodate approximately 120 children.

The development includes 20 car parking spaces for the crèche, with one accessible space. Additionally, there will be 6 long-term and 16 short-term cycle spaces available.

2.7 Access

The site is accessed from the east via Blackrock Road (R172), providing vehicular, pedestrian and cyclist access. A new entrance will be created, and the existing road will be modified to facilitate safe turning movements. This new entrance will include a north bound bus stop.

The internal road layout is designed to manage traffic speeds through the use of cul-de-sacs and subtle alignment changes. These features help slow down vehicles and promote the roadway as a shared space for play, ensuring a safe and secure environment for future residents.

Two additional pedestrian and cycle access points are proposed from Bóthar Maol, with the main access located close to the junction of Bothar Maol and Blackrock Road. The western access is included in line with the requirement in the Dundalk Local Area Plan 2025 for an active travel route / green way through the site, connecting a future greenway west on Bothar Maol, south to Birches Lane.

2.8 Parking

Car parking is provided on site, at the rate of 2 spaces per dwelling for 3-bed and 4-bed units, and 1 space per unit for 1-bed and 2-bed units. The proposed scheme also includes 24 no. visitor car parking

spaces. Cycle parking for the residents is provided on site, with rear garden access or front garden bike stores provided for all residential units. The proposed scheme also includes 120 no. visitor cycle spaces, and 16 no. bicycle share spaces.

A 20 space car park is provided for the crèche, with cycle parking also.

2.9 Drainage

2.9.1 Wastewater

Wastewater from the site will be collected and directed by gravity to an on-site pump station located along the eastern boundary, north of the proposed crèche car park. This system will manage effluent from the new development and accommodate future connections for an existing dwelling to the east.

The wastewater will be pumped north along Blackrock Road (R172) via a new rising main to Finnabair Crescent, where it will connect to the existing drainage network that leads to the Coes Road Wastewater Pumping Station.

Uisce Éireann have confirmed the site is serviceable and has issued the Client with a Confirmation of Feasibility (COF) and Statement of Design Acceptance (SoDA) for the proposed development. The COF confirms that capacity is available in the public system, albeit discharges over 61m^3 must be stored on site during the day and discharged between 7pm and 7am.

A Connection Agreement for 200 units to discharge wastewater to the Coes Road Pumping Station is already in place and paid for.

2.9.2 Surface Water

The surface water management plan comprises of onsite attenuation discharging to Dundalk Estuary. Surface water from the main residential area will be directed to a nearby drainage channel, while water from the access road will discharge to a nearby wetlands system and associated conveyance channels.

The development aims to minimise hard surfaces and use Sustainable Drainage Systems (SuDS) to manage runoff. The SuDS treatment train includes filtration systems, nature-based measures (bio-retention tree pits, bio-swales, detention basins), a detention system, and a class 1 bypass petrol interceptor.

The design complies with the Greater Dublin Strategic Drainage Study (GDSDS) and includes a 20% climate change factor as required by Louth County Council Water Services.

IE Consulting conducted a hydraulic assessment of existing open channels. The assessment shows that the proposed development will not increase flood levels, impact the hydrological regime, or raise flood risks to adjacent lands. The report concludes that the approach is appropriate from a hydrological and flood risk perspective.

2.9.3 Water Supply

Uisce Éireann has confirmed that the site can be serviced and has issued a Confirmation of Feasibility (CoF) and Statement of Design Acceptance (SoDA) for the proposed development.

A new 200mm diameter looped water main will be installed on-site, with 150mm and 100mm diameter spurs as needed, along with a new bulk water meter. This 200mm main will connect to the upgraded 150mm diameter water supply on the R172 Blackrock Road to the east of the development, under the CoF requirements.

2.10 Services

The development will be served by existing ESB and telecommunications infrastructure in the area. A gas connection is not proposed for the development.

The existing overhead powerlines that cross the site will be undergrounded.

2.11 Changes to the Proposed Development

The development was finalised after a detailed design process, evolving iteratively within the Design and Environment Teams and incorporating feedback from the Local Authority through the LRD process. Section 3 of this NTS outlines the alternative designs considered, leading to the preferred design described above.

2.12 Demolition and Construction Phase

This application includes an *Outline Construction and Environmental Management Plan* (OCEMP) including a plan for Waste Management on site.

The Outline CEMP is based on current information and assumptions. It is not intended to bind the applicant or contractors to these proposals, as they may change depending on circumstances at the time of construction.

Upon receiving permission, the appointed contractors will update the Outline CEMP to comply with the requirements, mitigation, and monitoring measures of the EIAR, as well as any conditions imposed with the grant of permission. The updated CEMP will be submitted to the Council before construction begins.

The current indicative phasing suggests that development will be split into two phases, encompassing approximately 48 months. These plans are flexible and may change based on various factors including market demand, planning permission, funding, etc. Phases may also overlap.

A 7-year permission is sought to allow for mobilisation, design, and potential legal challenges. The Table below sets out the proposed phases of development. The removal of the foundations built on site in late December 2024 and early 2025 and the former pumphouse are envisaged to be completed as part of the enabling works and site set up in Phase 1.

Table 2-1 Indicative Phasing, Duration and Sequencing

Phase 1	
Enabling Works & Site Set Up	24 months for completion of first 198 houses plus the creche with associated infrastructure
Installation of the surface water outfall pipe and headwall adjacent to the R172	
Installation of spine surface water sewers, wastewater sewers, water mains and surface water attenuation.	
Installation of Type 3 Wastewater Pumping Station	
Installation of Wastewater and Watermains on the Public Roads, including works along Blackrock Road and Tandy's Lane.	
Construction of new development entrance and modification works to the R172 including new bus stop	
Construction of Phase 1 housing units and creche	
Installation of Phase 1 roads, footpaths & cycle paths and shared parking bays	
Installation of Phase 1 hard and soft landscaping and permeability links including Loakers Park	
Phase 2	
Site Set Up	24 months for completion of second phase of 304 units with associated infrastructure & open space
Installation of spine surface water sewers, wastewater sewers, water mains and surface water attenuation.	
Construction of Phase 2 housing units	
Installation of Phase 2 roads and footpaths	
Installation of Phase 2 hard and soft landscaping and permeability links to adjacent lands	

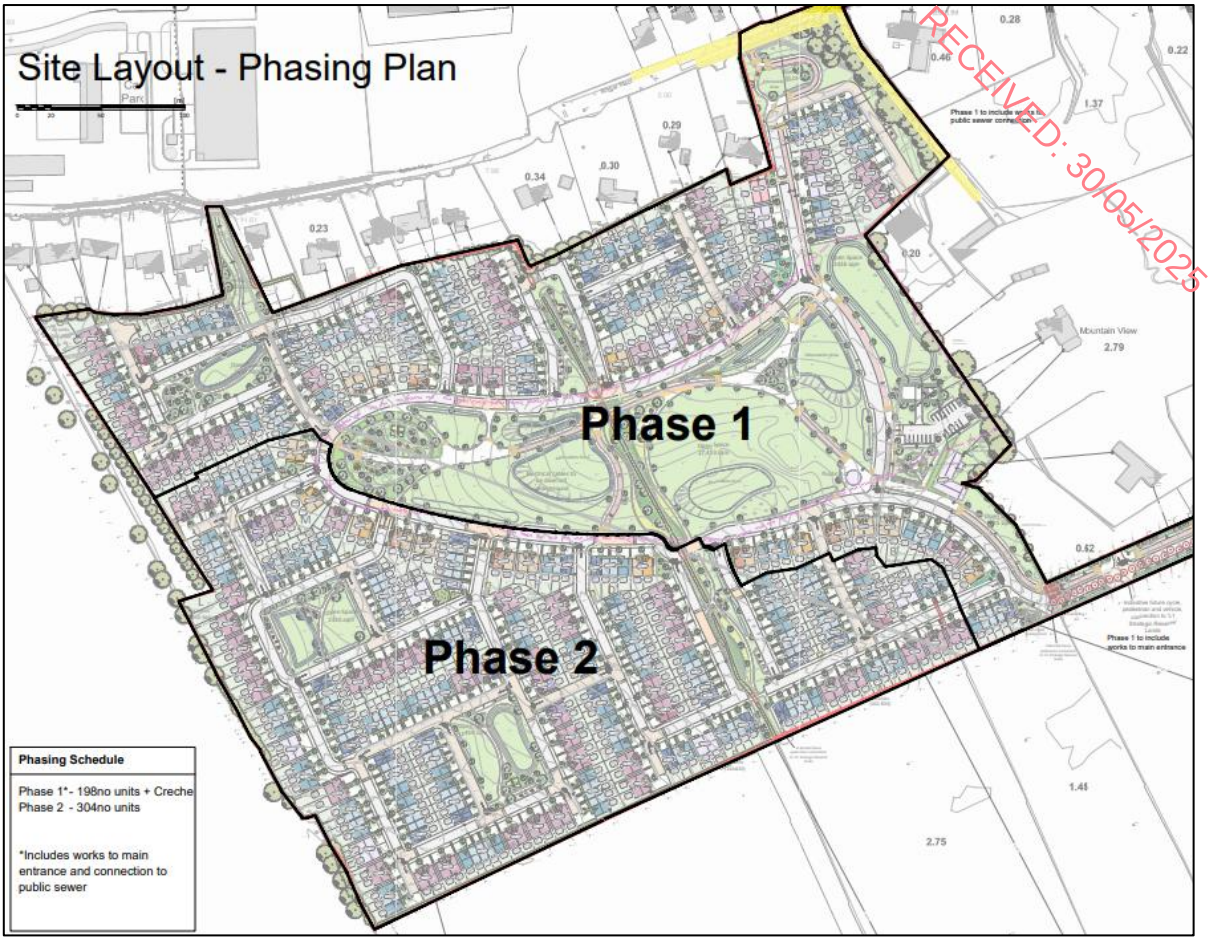

Figure 2-3 Site Layout – Phasing Plan (Extract from JFA Drawing Pack, *Drg. No. P1016*, JFA)

2.12.1 Site Facilities and Management

Site Facilities including compounds, parking, staff facilities, storage areas etc. will be located within the principal site.

Materials will be stored safely to minimise environmental risks and managed on a 'just-in-time' basis. Fuel storage areas will be bunded and clearly marked, with fuel transported from the off-site compound to the plant and equipment as needed. A dedicated fuel filling point will be established on site.

Temporary toilets and wash facilities will be provided for construction workers, requiring periodic waste pumping and offsite disposal by an authorised sanitary waste contractor.

The contractor will establish a secure site boundary with appropriate signage, hoarding, welfare facilities, and site office, ensuring safe access and egress. The hoarding will create a secure environment, minimising risks for untrained individuals and reducing environmental impacts such as noise, visual impact, and dust.

Controlled access points will be locked when not monitored, and the hoarding will be painted, well-maintained, and feature graphics related to the development. This setup will prevent unauthorised entry and reduce the risk of vandalism.

The contractor will maintain the site and surrounding areas, including providing lighting for safety and security, avoiding shadows on surrounding footpaths, roads, and amenity areas. Best practice measures are outlined in the Outline CEMP which accompanies this application and the Contractor(s) will be required to comply with and update this CEMP prior to commencement of development.

2.12.2 Construction Hours

The proposed construction hours are (subject to the restrictions imposed by the local authority):

- 07:00 to 18:00 Monday to Friday (excluding bank holidays) and
- 08:00 to 13:00 Saturdays.

No site activity will be allowed on Sundays and Public Holidays.

Deviation from these times will only be in exceptional circumstances where prior written approval has been received from the planning authority.

2.12.3 Access and Parking

The developer will ensure that all traffic related to the development has adequate off-street parking, preventing any vehicles from parking on public roads. Specific trades needing to transport specialised equipment will have a designated parking area near the site compound and storage area.

Construction traffic will include cars for construction workers and HGVs/LGVs carrying materials. HGVs will arrive and depart regularly during working hours, while staff trips will occur just before and after working hours. During peak construction, there will be an average of 6 HGV movements per hour, totalling 40 HGVs per day. Outside of peak periods, this will reduce to 25 HGVs per day.

The number of construction workers, including sub-consultants, is expected to average 75-90 personnel daily. With a typical vehicle occupancy of 3 workers per vehicle, this results in up to 30 inbound and 30 outbound vehicle trips.

The Framework Traffic Management Plan (included in the Outline CEMP) suggests HGVs will travel via the R132 or N52 and use Finnabair Crescent to reach the R172, avoiding Blackrock Village.

Construction routing details will be agreed with LCC before starting works, using the national road network as much as possible.

2.12.4 Demolition Phase

To facilitate the proposed development, previously completed works under an SHD development, including the foundations of five houses, will be removed. The ruins of an old pumphouse will also be demolished, and existing overhead electrical lines will be relocated underground.

2.12.5 Earthworks

The proposed development will involve excavation, topsoil stripping, and material removal for platform installations and site regrading. This includes:

The proposed development will require excavation for the following non-exhaustive list of activities, with associated approximate volumes of the materials to be excavated.

- Topsoil: 53,000m³
- Subsoils from reduced level excavations: 32,500m³
- Subsoils for main drainage and attenuation: 10,000m³
- Rock for main drainage and attenuation: 5,000m³
- Subsoils for site services: 10,000m³

Clean, inert, non-hazardous excavation material may be reused for landscaping or engineering fill after testing and risk assessment. Materials not reused will be sent for recovery, recycling, or disposal at licensed landfills. Contaminated materials will be tested and classified as non-hazardous or hazardous, managed by the contractor, and sent to appropriate facilities.

2.12.5.1 Excavation Waste Management

Ground investigations revealed silty sandy gravelly clays over rock. Testing includes:

- Trial pits & BRE365 soakaway tests
- Rotary cores
- Geophysical survey
- Groundwater monitoring
- Geotechnical and geo-environmental testing

2.12.5.2 Waste

An inventory of the Waste composition estimated for the proposed development is included in Chapter 2 of this EIAR, including a percentage breakdown on the waste material to be reused, recycled, recovered or disposed. Excavated materials will be re-used on site for fill where suitable e.g. Rock will be crushed on site and re-used as a sub base to footpath and cycle paths; existing topsoil and subsoil materials may also be reused as landscape fill.

2.12.5.3 Invasive Species

No invasive species of note are recorded within the property boundary.

2.13 Construction Activities

The construction activities on site include setting up the haul road, contractor's compound, and security fencing/hoarding. Site clearance involves stripping topsoil and temporarily storing it for reuse. Excavation includes subsoil and rock breaking, with temporary storage for potential reuse through crushing and grading. Cranes will be erected and operated for various tasks.

Substructure and superstructure work will include foundations, building the timber frame structure with a brick/render facade, and fitting out. Roads will be constructed, and services such as main drainage (wastewater, surface water) and utilities (ESB, water supply, telecoms, public lighting) will be installed. Open spaces and landscaping will include boundary treatments like walls and fencing.

2.14 Construction Materials

The applicant has conducted rock reusability testing, confirming that existing rock is suitable for use as 6F2 material. In addition to reusing rock from the site, the development will require importing approximately 5,000m³ of rock reuse, 20,000m³ for dwelling sub-structure, 10,000m³ for driveways, 12,000m³ for roadways, 15,000m³ for main drainage, and 10,000m³ for site services trenches and under paths.

2.15 Construction Waste Arising

Construction waste, defined as waste arising from construction activities, will be managed through prevention, reuse, and recycling. Based on benchmarks from the BRE SMARTWaste Plan, the estimated construction waste for the project includes approximately 9,303m³ from residential buildings and 100m³ from the creche, totalling around 9,403m³. The contractor will minimise waste generation on site and reduce waste removed for recovery or disposal where feasible.

2.16 Construction Waste Management

The contractor will implement measures to prevent waste generation, facilitate recycling, and minimise disposal during construction. This includes segregating recyclable materials like metal, timber, and glass, and removing them to licensed facilities. Office and food waste will be separated into recyclables and biodegradable waste. Hazardous materials will be stored securely and removed by authorised collectors. The site will be kept clean with regular litter picking.

Materials will be managed with 'just in time' delivery to minimise wastage, and waste will be promptly removed to authorised facilities. Off-site storage facilities for excavated material will have the necessary permits.

The contractor will develop and detail the Outline Construction and Environmental Management Plan (CEMP) before starting work, incorporating best practices.

Authorised collectors will transport waste, and the contractor will maintain an updated list of waste collectors and facilities, ensuring they hold valid permits. Waste contractors and facilities will be selected based on proximity, competency, capacity, and serviceability. The applicant reserves the right to use any suitably licensed facility if identified sites are unavailable or if a better option becomes available.

2.17 Offsite Disposal of Construction Waste

Construction waste will be transported to authorised facilities in compliance with the Waste Management Act 1996, as amended. The contractor will keep an updated list of all waste facilities receiving site waste, along with copies of valid Certificates of Registration, Waste Facility Permits, and Waste Licences for each facility.

2.18 Construction Waste Management Costs

The Construction Waste Management Plan (CWMP) will address costs related to handling, storage, transportation, revenue from rebates, and disposal. Reusing materials on-site will reduce transport and disposal costs. Clean, inert materials that cannot be reused may be classified as by-products and used for landfill capping or quarry reinstatement, subject to EPA approvals.

Salvageable metals will earn rebates, and recyclable materials like cardboard and certain plastics will be handled at lower costs. Timber can be recycled into chipboard. Landfill charges are approximately €170/tonne for non-hazardous waste and €25/tonne for inert waste, with additional collection fees for skips. Segregated waste collection is generally cheaper than mixed waste.

Regular waste audits will be conducted to monitor and reduce waste, identifying opportunities for improvement. The audits will track the quantity and type of waste, record details of waste facilities, and highlight corrective actions. Summary audit reports will be sent to the relevant authority.

2.19 Monitoring

2.19.1 Construction Environmental Management Plan

A Construction and Environmental Management Plan (CEMP) is included with this LRD planning application. The CEMP will be updated by the Main Contractor(s) following a grant of permission, to address any changes required by planning conditions and will be agreed with the planning authority prior to the commencement of development.

The CEMP demonstrates the applicant's commitment to implement the proposed development so as to avoid or minimise the potential environmental effects resulting from construction activities.

Aspects addressed within the CEMP include but are not limited to: working hours; noise and vibration; dust and air quality; traffic and vehicle management; management of waste, pollution incident control; and protection of vegetation and fauna.

The mitigation and monitoring measures proposed in Chapters 4 to 15 of this EIAR will be implemented during the demolition, construction and operational phases, as relevant.

The appointed contractor will be required to implement this CEMP throughout the course of the construction phase. All personnel will be required to understand and implement the requirements of the plan.

2.19.2 Community Liaison

A Liaison Officer will be appointed by the contractor to handle any community issues promptly and efficiently during construction. These details will be included in the Contractor(s) CEMP.

2.19.3 Integrated Pest Management

The Main Contractor will ensure control of pests, including rodents, birds, insects, and plants, at all times. Control measures will be implemented before any site work begins. Any poison used will comply

with Health and Safety requirements to avoid danger to children, pets, and wildlife. Old and disused service pipes and voids will be removed or filled to prevent pest infestation.

2.20 Commissioning

The testing and commissioning of services (drainage, watermain, electricity) will be completed in accordance with relevant codes of practice.

2.21 Property Management

A property management company will be appointed to oversee the scheme and common areas, ensuring the development is maintained to a high standard. Their responsibilities will include cleaning, landscaping, refuse management, insurance, and maintenance.

2.22 Decommissioning

The design life of the scheme is greater than 60 years. Thus, for the EIA process, the development is considered permanent, and a decommissioning phase is not considered in this report.

2.23 Conclusion

This section outlines the development parameters for the proposed project, including summaries of the architectural, landscape, and engineering strategies. It also provides an overview of the construction phasing. Additional details are available in the *Outline Construction and Environmental Management Plan* by DOBA.

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 2001 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 (3 no. alternative scenarios)
v. Alternative Processes

3.1 Do-Nothing Alternative

The 'Do-nothing' alternative is a general description of the evolution of the key environmental factors of the site and its environs if the proposed development did not proceed.

Each Chapter of this EIAR includes a description of the 'Do Nothing' alternative. In general, If the proposed development does not proceed, it is anticipated that the site will remain in its current condition and agricultural use in the short to medium term.

However, it is likely that another residential development proposal would be progressed on the site having regard to its location, its residential zoning and the critical need for housing.

3.2 Alternative Locations

As the development of this site for residential has been identified in the County Development Plan through its Settlement Strategy and land use zoning, and the development is in accordance with compact settlement objectives at a national level, no alternative sites were considered in this EIAR.

3.3 Alternative Uses

The primary determinant of uses for a site is established by its land use zoning determined in the relevant Development Plan – Louth County Development Plan 2021-2027 (CDP). The proposed development site is zoned is zoned A2 – New Residential Phase 1 and H1 – Open Space and the uses are identified in the CDP as generally permitted.

The CDP identifies the primary uses for residential zoned lands to include residential, and creche, recreational / amenity open space. Alternative uses include similar residential facilities including nursing home, retirement village, student accommodation or traveller accommodation. Recreational / sports facilities and education are also generally permitted.

Similarly, the CDP indicates recreational / amenity open space or recreational / sports facility, coffee shop, restaurant are alternative uses generally permitted or open for consideration on the Open space zoned lands.

In principle, an application on the subject lands for any combination of the uses listed above could be progressed on the site subject to compliance with other policies and objectives in the CDP and relevant Guidelines.

The Dundalk Local Area Plan purports to zone the subject lands as "L1 Strategic Reserve". This conflicts with the CDP. The zoning, policy, objectives, text and mapping in the CDP takes precedence over same in the LAP. This is confirmed in the LAP – Refer Policy Objective DM3. This is also a requirement of section 18(4)(b) of the Planning and Development Act 2000 (as amended), which provides that where any provision of an LAP "conflicts with" the provisions of the development plan, the provision of the local area plan "shall cease to have effect". Therefore, the lands continue to be zoned as "A2 New Residential Phase 1" under the CDP at this time. For completeness, the validity of the purported change made in the Dundalk Local Area Plan has been questioned in legal proceedings bearing the name and title Glenveagh Homes Limited v. Louth County Council, High Court 2025 570 JR. The proceedings were commenced on 29 April 2025, and remain pending.

3.4 Alternative Design (including size & scale)

This development was arrived at following detailed design and has evolved as an iterative process within the Design and Environment Team and in response to feedback from the Local Authority through the LRD process.

Three Alternative Designs are presented in Chapter 3 of this EIAR, which vary in scale, size and extent. The final design chosen by the developer i.e. the project as presented is deemed to be the most suitable project for the site.

3.5 Alternative Processes

This is an urban residential development and therefore the consideration of alternative processes to be considered relates to the methods of construction. Alternatives have been considered, within the Outline Construction Environmental Management Plan (prepared by DOBA Consulting Engineers) detailing the construction processes likely to be employed and which have been assumed for the purposes of this EIAR.

3.6 Difficulties Encountered

Each Chapter of this EIAR includes a section on Difficulties Encountered and a description of same where encountered. In general, no significant difficulties were encountered which inhibited this EIA Assessment.

3.7 Proposed Preferred Alternative

On the basis of the foregoing, it is considered that all reasonable alternatives to the project are considered, and no alternatives have been overlooked which would significantly reduce or further minimise environmental effects.

Having considered all alternatives, the final design chosen by the developer i.e. the project as presented, is deemed to be the most suitable project for the site. This is the project described in Section 2 of this document (NTS - Volume I of the EIAR) and Chapter 2 of Volume II of the EIAR.

4 Assessment of Environmental Impacts

4.1 Population & Human Heath

The assessment of Population and Human Health is contained within Chapter 4 of Volume I. This chapter was prepared by Louise O'Leary, Associate Director at McCutcheon Halley Chartered Planning Consultants. Louise has a Masters in Regional and Urban Planning (BA MRUP Hons), obtained in 2005, and a Diploma in EIA Management, obtained in 2014, both from University College Dublin. Louise is also a Corporate Member of the Irish Planning Institute.

4.1.1 Existing Environment

The proposed development site is located within the CSO settlement boundary of Dundalk Urban Area and Haggardstown ED, which were selected as the main study area of this Chapter.

The majority of the proposed development site is zoned A2 – New Residential Phase 1. The central portion of the subject lands are zoned H1 – Open Space in the Louth County Development Plan 2021-2027 (CDP). It is noted that the zoning of the subject lands in the recently adopted Dundalk Local Area Plan 2025-2031 is not consistent with the CDP. As per the planning hierarchy, the zoning in the CDP takes precedence.

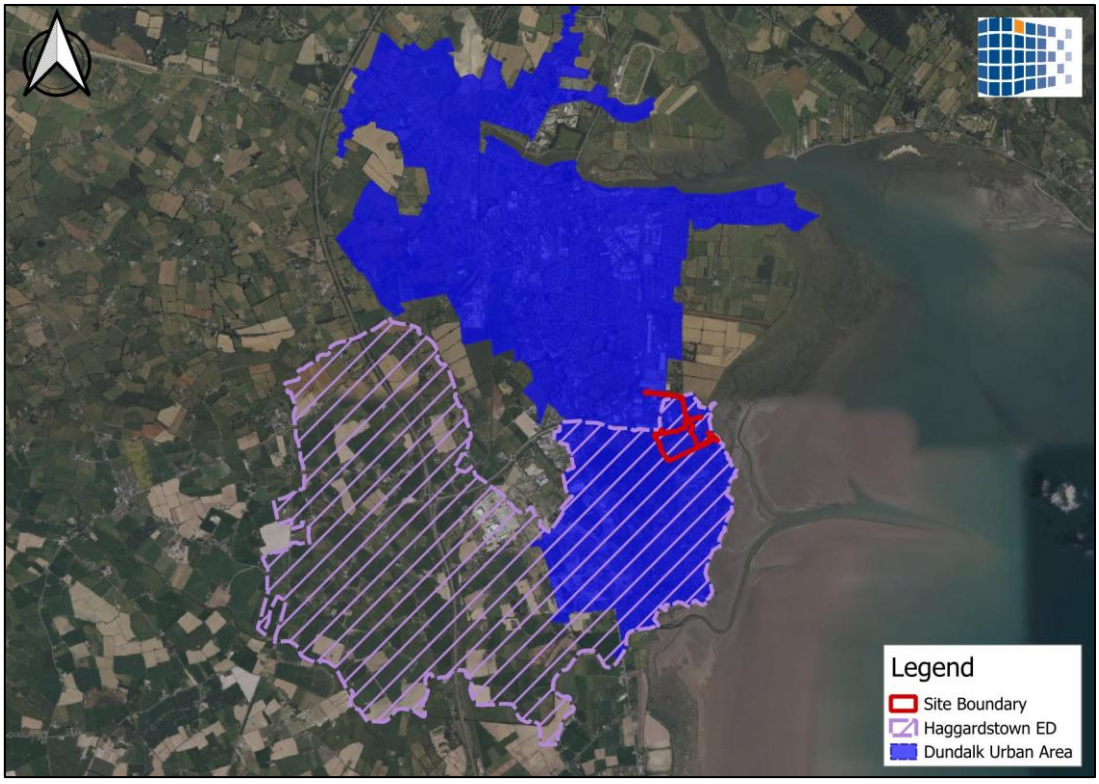

Figure 4-1 Census 2022 ED and CSO Dundalk Urban Area in respective if subject site (Source: MHP GIS Team)

4.1.1.1 Sensitive Receptors

For the purpose of this chapter, the primary sensitive receptors are:

I. Existing residential dwellings in the vicinity of the proposed development site, in particular, existing low-rise suburban residential dwellings located to the north and east;
II. Users of the public road network, specifically Blackrock Road (R172) Bóthar Mael, attendance of the surrounding schools, local services and facilities and the wider demesne lands;
III. Future occupants of 'The Loakers' lands for which permission has been granted (Reg. Ref. 311776) for a residential development.

4.1.1.2 Population

According to the 2022 CSO data, Haggardstown ED's population reached 9,301, marking a rise of 2,369 people (about 34.17%) since the 2016 Census. This growth rate is nearly four times higher than the Dundalk Urban Area and Louth County, which experienced increases of 8.4% and 8.6%, respectively, over the same period. The average age of those residing in Haggardstown ED was 36.8 in 2022, while the average age in Dundalk Urban Area is slightly lower at 36.7 years.

4.1.1.3 Household

At Census 2022, there were 3,293 and 15,936 private households in Haggardstown ED and Dundalk Urban Area respectively. Overall, there is a notably a higher proportion of 1- and 2-person households in both Haggardstown ED (49.9%) and Dundalk Urban Area (53.2%).

4.1.1.4 Housing Delivery

In 2022, Haggardstown ED had a total of 3,598 residential units, while Dundalk Urban Area had 17,470 residential units. This includes both occupied and unoccupied dwellings.

Out of these residential units, there are 3,293 private households in Haggardstown ED and 15,936 private households in Dundalk Urban Area. In Haggardstown ED, 95% of the housing stock consists of houses or bungalows, and 3.5% are apartments or flats. In Dundalk Urban Area, 91% of the housing stock consists of houses or bungalows, and 8.8% are apartments or flats.

4.1.1.5 Owner Occupancy

Across Haggardstown ED, 74.2% of the housing stock is owner occupied and 21.4% is rented either through private landlord or from a public body. In Dundalk Urban Area 57.1% of the housing stock is owner occupied and 37.1% is rented either through private landlord or from a public body.

4.1.1.6 Deprivation Index

The Pobal Deprivation Index indicated that the overall score for Louth County was -3.59 ('Marginally below average') and Haggardstown ED was 5.13 ('Marginally above average').

4.1.1.7 Employment

The majority of persons at work within Haggardstown ED are occupied in Transport and Communications (28.3%), Commerce and Trade (28.1%), and Professional Services (12.8%). Similarly, in Dundalk Urban Area, the majority of workers are employed in Transport and Communications (27.7%), Commerce and Trade (24.3%), and Professional Services (18.9%).

4.1.1.8 Social Infrastructure

Social infrastructure includes a wide range of services and facilities, including education, health, community, cultural, play, faith, recreation and sports facilities that contribute to the quality of life. This application is accompanied by a *Social Infrastructure Audit, Childcare Demand Assessment* and *School Demand Assessment*, which should all be read in conjunction with this chapter. Essentially these reports confirm that sufficient facilities in this regard are available in the area which can adequately provide for the anticipated population provided as part of this development.

4.1.2 Do Nothing Scenario

A 'do nothing' scenario, which is to say not developing these lands, would represent a lost opportunity to develop lands for residential use in the built up area of Dundalk. Thus, the site would remain under-utilised and it would not contribute to increasing the provision of housing in this area.

However, given the zoning and planning context, it is reasonable to expect that a similar residential development could be proposed for the site and in such case similar effects as described above would be expected.

4.1.3 Impact Assessment

4.1.3.1 Construction Phases

4.1.3.1.1 Population

During peak construction, it is anticipated that there will be up to 75-90 staff required on site. Employees will travel from their existing place of residence, and so no temporary increase in the local population is anticipated. The likely effects on the population are **neutral, short term and not significant.**

4.1.3.1.2 Employment & Economics

The construction of the proposed development will take c.47 months and will generate direct employment within the local construction sector. There will also be off-site employment and economic activity associated with the provision of construction materials and professional services. The presence of construction workers will also generate additional spending in local shops and other local retail services. The likely effects on the local economy and employment are **positive, short-medium term,** and **not significant**.

4.1.3.1.3 Health

Construction sites pose significant risks to public health and safety, with unauthorized access considered trespassing on private property. Without mitigation, impacts from construction traffic, noise, dust, and visual effects are likely to be **significant** and **short-term**, ranging from **slight to profound** depending on the incident's severity. In the absence of standard mitigation measures, these impacts are likely to be **significant.**

4.1.3.1.4 Residential Amenity

In the absence of mitigation, construction activities are likely to cause **significant temporary to short-term** disruptions to residential amenities, with **moderate** impacts from increased construction traffic,

noise, dust, and visual effects from equipment like cranes. Without standard mitigation measures, the anticipated impact on residential amenities would be **local** and of **moderate significance**.

4.1.3.2 Operational Phases

4.1.3.2.1 Population

The proposed residential development, housing around 1,376 people, will have a **positive, moderate-significant**, and **long-term effect** on the population. It includes a 120-space childcare facility, addressing part of the 1,325-space demand (1,139 currently available), with a **positive effect** of **imperceptible significance**. The development requires 152 primary and 182 post-primary school places, but with 28 primary and 8 post-primary schools nearby, plus planned schools, the effect is **neutral** with **no significant impact**. New open spaces and play areas will enhance amenities, with a **positive effect** of **moderate significance**. The project promotes sustainable urban growth, supporting public transport and reducing long commutes, with a **positive, moderate-significant**, and **permanent effect.**

4.1.3.2.2 Employment & Economics

The operational phase of the proposed development will create limited employment opportunities in apartment maintenance and landscaped area upkeep, with a **positive, permanent effect** of **imperceptible significance**. The new population of approximately 1,376 residents will increase local spending, supporting businesses within the area, with a **positive, permanent** economic impact of **slight significance**.

4.1.3.2.3 Health

The proposed development promotes walking and cycling with 660 bicycle spaces (502 residential, 120 visitor, 22 creche, 16 bicycle share) and minimal car parking, addressing health risks from physical inactivity. The layout separates pedestrians from traffic and ensures accessibility for all, complying with universal access standards, resulting in a **significantly positive**, **long-term** effect on residents' health and wellbeing. Energy-efficient design reduces fossil fuel use, lowers CO2 emissions, and improves air quality, with a **locally significantly positive** and **permanent** effect on environmental and public health.

4.1.3.2.4 Residential Amenity

The proposed development creates a high-quality living environment for future residents, with well-designed maisonettes and houses that meet or exceed housing standards. The design carefully considers natural light and meets guidelines to ensure bright and comfortable interiors. Given this, no visual amenity or privacy impacts are anticipated for existing residents, as demonstrated by the CGI and *Verified View Photomontages* prepared by 3DDB which accompanies the proposed development and the Landscape & Visual Chapter of this EIAR. The overall effects on existing residents are **neutral**, **permanent** and **positively significant**.

4.1.3.2.5 Local Amenity

As detailed in the *School Demand Assessment, Childcare Demand Report and Social Infrastructure Audit* reports by McCutcheon Halley Chartered Planning Consultants, which accompany the application, adequate capacity exists for existing social infrastructure within the locality such that it is anticipated that the proposed development will have a **neutral**, **imperceptible, long-term** impact on

access for existing residents. Furthermore, the application includes a large two-storey childcare facility, which will have **significant positive, long-term effects** through improving the variety and accessibility of the social infrastructure offerings in the area.

4.1.4 Mitigation

4.1.4.1 Incorporated Design

The proposed development complies with the Building Regulations which provide for the safety and welfare of people in and about buildings. The Building Regulations cover matters such as structure, fire safety, sound, ventilation, conservation of fuel and energy, and access, all of which safeguard users of the buildings and the health of occupants.

The proposed design provides for the segregation of pedestrians and bicycle traffic from motorised traffic. The design also incorporates the principles of universal design and the requirements of Part M of the Building Regulations so that the development will be readily accessible to all, regardless of age, ability or disability.

The integration of energy efficient measures into the design will provide for healthier living standards for future occupants, less dependence on fossil fuels and associated improved air quality.

The availability of on the doorstep public open space, amenity spaces, and a highly accessible layout across the scheme including segregated pedestrian entrances which is strategically located proximate to the village of Dundalk and Blackrock, will encourage sustainable modes of outdoor access for a wide age group.

4.1.4.2 Construction Phase

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.

An *Outline Construction Environmental Management Plan (CEMP)* is included in the application documentation for the proposed development are included in the application documentation. The contractor will further update the CEMP, agreed with the Council prior to commencement, and implemented by the selected contractor after any consent is received.

Measures to ensure public safety, with respect to construction traffic and the construction phase have been included in the included in the *Framework Construction Traffic Management Plan,* submitted as part of the Outline CEMP. To manage risks associated with vehicle movements, a trained banksperson or traffic marshal will oversee all loading and unloading activities, ensuring safe coordination to minimize conflicts with pedestrians, cyclists, and other vehicles. The construction site will be fully secured with appropriate fencing and access controls to prevent unauthorized entry by the general public, maintaining a safe environment by restricting access to hazardous areas. Clear and prominent warning signage will be displayed around the site to alert pedestrians, cyclists, and drivers of ongoing construction activities. A final CTMP will be agreed with the Council prior to commencement of development.

4.1.4.3 Operational Phase

The proposed development is of a high quality design that incorporates generously sized dwellings with integrated energy efficiency measures and an abundance of open space. The impact assessment section did not identify likely significant negative environmental impacts on population and human health arising from the operational phase of the proposed development. Accordingly, mitigation measures are not proposed.

4.1.5 Cumulative Impact

The cumulative effects of projects in the vicinity of the study area have been considered with reference to the projects outlined in **Chapter 1** of this EIAR.

Various housing projects in proximity to the site, like those at Inner Relief Road, Dublin Road, and Raynoldstown Village, will temporarily increase traffic and noise during their construction phases, which will have a **Temporary Negative** Impact. These impacts will be managed through Construction Environmental Management Plans (CEMP).

These housing projects will help solve the housing crisis by providing new homes, which will have a **very Significant, long-term positive effect**. A new neighbourhood centre at Raynoldstown Village will create jobs, boost the local economy, and offer essential services. The proposed development will increase the local population, supporting these amenities.

The design promotes sustainable transportation, reducing car use and encouraging physical activity. Projects like the Inner Relief Road Active Scheme and Dundalk Active Travel Project will improve walking and cycling access, supporting a shift towards sustainable transportation and compact urban development, which will have a **very Significant positive long-term effect** within the local area.

4.1.6 Residual Impact Assessment

During the construction phase, anticipated effects on population and human health include **localised**, **temporary** disruptions from increased construction traffic, noise, dust, and visual impacts from equipment like cranes. These impacts on residential amenity are expected to be **short-term** and of **moderate significance**.

At operational phase, the residual effect of the proposed development for population and human health is determined to be **significantly positive** having regard to the delivery of much needed new

homes in a location that has the carrying capacity in terms of both services and amenities to support the population generated by the scheme.

4.1.7 Monitoring

Measures to avoid negative impacts on Population and Human Health are largely integrated into the design and layout of the proposed development. Compliance with the design and layout will be a condition of any permitted development.

No specific monitoring is proposed in relation to this section. Monitoring of standard construction mitigation measures as outlined in this EIAR will be undertaken by the appointed contractor.

The likely residual effects on residential amenity, for existing residents in the area is **neutral**, **permanent**, and of **slight significance**.

4.2 Landscape & Visual Character

The assessment of Landscape & Visual Character is contained within Chapter 5 of Volume II.

4.2.1 Existing Environment

The Application Site extends to approximately 18 hectares and is located within the settlement boundary of Dundalk town. It is situated approximately 1.4km to the north of Blackrock village, and 4km to the south-east of Dundalk town centre. The land is principally bound by the R172 Blackrock Road to the east, Bóthar Maol to the north, Dundalk Golf Club to the west/southwest and existing agricultural land to south.

4.2.1.1 Existing Landscape Character

The Application Site comprises a set of open fields located to the south of Dundalk town within a landscape characterised by suburban and industrial development to the north and south, Dundalk Golf Club course to the west and two detached properties situated off the Blackrock Road to the east towards the Dundalk Bay shoreline. South Dundalk and the Blackrock area are characterised in part by extensive housing estates that have been built out over the last couple of decades with retail, industrial / commercial and institutional development also being a feature of the emergent townscape to the north across Finnabair and towards the N52 Road. Where the urban edge meets the rural landscape, there are often formal and abrupt boundaries with differing treatments along the jagged periphery. The collective influence of the peripheral areas mean that built form and infrastructure is a feature of this area, and the site would not be categorised as sensitive in landscape or visual terms.

The Application Site itself is a rural landscape set on the urban periphery which is largely managed farmland and, in broad terms, the landscape value and quality would be categorised a medium based on its “everyday” character and undesignated status The gently rolling landscape, while attractive in its own right does not possess many notable features other than hedgerows and a tree belt and it would not be considered unique or rare in this part of Ireland. The cores of the fields are intensely managed arable lands and there is little in the way of any species or landscape diversity away from hedgerows and ditches that would result in a higher category of value.

Such factors were likely to have been a key consideration in the Louth County Development Plan 2021-2027 (LCDP) designation of these lands for residential development rather than solely for open space or retention as it currently is.

4.2.1.2 Baseline Visual Amenity and Views

The LCDP identifies protected Views and Prospects within the Dundalk area but the Application Site is not within the banding of any of these or so distant for the implications to be negligible. Views from the Dundalk Bay shoreline towards the site are restricted due to intervening vegetation including the designated group of trees at the junction of Bóthar Maol and the Blackrock Road. The gently undulating nature of the landscape and extent of peripheral vegetation on the boundaries effectively disguise and mute the site’s influence in any mid to distant ground level views and the vast majority of publicly accessible areas.

10 no. representative viewpoints were identified through a combination of contour examination (using OSI mapping and data) and site surveys to establish where views might be possible and where there may be higher potential numbers of visual receptors (e.g. the Blackrock Road).

4.2.2 Nature of Proposed Development

It includes for 502 no. residential units, comprising 1, 2, 3 and 4 bed units in a mix of maisonettes, terraced and semi-detached units, with 1 no. detached bungalow unit; Creche building (570.7 sqm Gross Floor Area) with outdoor secure play area; and all associated site and development works including landscaping and amenity areas, infrastructure and services, and new entrance from Blackrock Road, with additional pedestrian/cycle access from Bóthar Maol.

The proposed development has been designed to follow the principles of the '*A2 New Residential Phase 1*' and '*H1 – Open Space*' designations on this land and sought to retain key boundary trees and natural features across the site within areas of proposed public open space.

4.2.3 Summary of Predicted Effects

4.2.3.1 Landscape Effects

During the construction stage, the nature of groundworks, construction activity, road building and associated infrastructure will mean that the core of the Application Site will be subject to substantial effects on account of re-grading and profiling works

For the operational stage, on completion, the most appreciable effects will relate to the scale and nature of the proposed development which will result in houses and maisonettes occupying the majority of the site footprint although in excess of 26% is to be set out as public open space. While substantial and having a major permanent effects, the proposed development, associated parklands, open space and public realm landscapes will include positive elements contributing to the amenity, character and broader environment of this part of Dundalk. The layout has also taken into account existing features on the site including the internal hedgerows and peripheral tree groupings towards Bóthar Maol and how these could either be retained or be subject to minimal impacts as a consequence of the proposed site layout. The proposals include for major planting works which will contribute to far more significant vegetation cover on this site than it has at present including over 600 no. 'semi-mature' or 'extra-heavy standard' size trees to give instant impact and provide enclosure and screening. Further landscape works include woodland planting (1,285m²), new hedgerows (596 linear meters), and shrub planting (6,855m²);

The residential development will add to the residential provision within this part of Dundalk and sense of townscape in this area towards Blackrock. Given the visual separation between the site and nearest proposed developments, cumulative effects would not be significant and would be more related to the wider sense of place that specific effects arising from this proposal and other developments in isolation. Consequently, no unacceptable impacts will arise from the proposed development in combination with any existing, permitted or proposed developments in this area.

4.2.3.2 Visual Effects

The low-lying topography, built environment and existing vegetation ensure the majority of areas within the Dundalk and Blackrock area will experience no or negligible effects due to the proposal being visually obscured or not being a significant factor in any view or in association with any visual amenity provision. No views would be subject to significant adverse or unacceptable changes as a consequence of this development. The proposal will result in long-term significant effects to the Application Site and the immediate periphery but from areas beyond the site, visual effects are likely to be predominantly of a slight neutral nature.

4.2.3.3 Conclusion

While recognising there are localised significant landscape and visual impacts, the proposed development, while sizeable, can be accommodated and absorbed into this part of Dundalk without causing significant detrimental or unacceptable landscape or visual effects.

4.2.4 Mitigation and Monitoring

The management of all areas will initially be undertaken by an ACLI approved landscape contractor with the developer remaining as client for duration of their contract for each section of the development. There will be a five-year guarantee after construction that all the proposed planting works still exists and has established in line with landscape design expectations. The planning application is accompanied by *Landscape Management and Maintenance Plan* setting out the objectives for management of external spaces or public realm areas for a 20-year period. Monitoring by a professional arborist is required for the duration of the construction works and regular monitoring of the landscaping will be undertaken post completion to ensure successful implementation.

4.3 Material Assets: Traffic & Transport

The assessment of Traffic and Transport is contained within Chapter 6 of Volume II.

4.3.1 Existing Environment

As a greenfield site, existing footways and cycle infrastructure are currently limited to the roads around the subject site.

Bus services runs along R172 Blackrock Road, between Blackrock and Dundalk, with a total of 7 buses throughout the day. The closest stop to the subject site is at Beaupark, which is 220m north of the R172 / Bothar Maol junction. The journey time into Dundalk town centre is approximately seven minutes.

Dundalk railway station is located to the west of Dundalk town centre, approximately 5km to the northwest of the subject site.

The development will take access onto the R172 Blackrock Road, which is a Regional Road that runs initially east from the R132 Dublin Road at Greengates, before turning north along the coast, and passing through Blackrock

Bothar Maol is a single-track residential access road, which provides access to 16 no. residential properties. Vehicles must pass each other at the driveways located along the road.

4.3.2 Proposed Development

The main features of the site design from a transport perspective are:

- Vehicle, cycle and pedestrian access will be from a new priority junction on the R172, to the east of the residential area.
- Improvements will be made at the R172 / Bothar Maol junction to reduce traffic speeds and provide safe pedestrian crossing points.
- A new northbound bus stop on R172 Blackrock Road, close to the site entrance.
- Two further pedestrian and cycle access points will be provided on Bothar Maol.
- There is a comprehensive network of high-quality walking and cycling routes within the subject site, and an extensive set of measures are in place to reduce vehicle speeds and priority.
- All proposed road and paths within the development will be designed in accordance with the Design Manual for Roads and Streets (DMURS, 2019).

4.3.3 Impact Assessment

4.3.3.1 Construction Phase

It is anticipated that the overall construction programme will commence in 2028 and take approximately 36 months to complete.

HGVs would travel to and from the site via either the R132 or N52 and use Finnabair Crescent to reach the R172. HGVs would not be permitted to travel through Blackrock Village. The use of these designated routes can be written into Contractor obligations, and compliance can be assured through observations and monitoring.

It is anticipated that there will be an average of 40 HGV and 60 car / van movements per day to and from the site during the construction period.

The overall effect is assessed to be negative, likely and short-term, and of **Slight** significance, and therefore **Not Significant** in accordance with the EIA Directive.

4.3.3.2 Operational Phase

The increase in traffic on the local network as a result of the development is below 10% on all roads in the study area, with the exception of:

- The R172 between the Inner Relief Road and Sandy Lane (10% to 13% increases)
- Rock Road between the R172 and Sandy Lane (10% increase)

A detailed assessment has been undertaken on these links, which has considered Severance (how much of a barrier the extra traffic will create), Driver Delay, Pedestrian Delay and Amenity (the 'pleasantness' of the pedestrian experience), and Accidents and Safety.

These effects have been assessed as negative, likely, long-term, Slight and **Not Significant** in accordance with the EIA Directive.

4.3.3.3 Cumulative Impact

The cumulative assessment takes into account traffic from other consented developments (or those awaiting a decision) within the study area, in addition to the traffic generated by the proposed scheme.

Cumulative effects have been assessed as negative, likely, long-term, Slight and **Not Significant** in accordance with the EIA Directive.

4.3.4 Mitigation and Monitoring

4.3.4.1 Construction Phases

Traffic impacts during the **construction stage** will be mitigated through the implementation of a Construction Traffic Management Plan (CTMP), which will be agreed with LCC. This sets out specific measures to reduce the impact of construction traffic including:

- Construction routes for HGVs
- The provision of signage, and contractor speed limits
- How deliveries will be programmed and managed
- Arrangements for dust and dirt control
- HGV safety measures.

No specific monitoring measures over and above expected normal construction and operational practices for such a development are proposed for the construction phase.

4.3.4.2 Operational Phase

Traffic impacts during the **operational stage** will be reduced through the implementation the Mobility Management Plan, which is a 'best practice' measure, that accompanies the planning application. This sets out measures to minimise the amount of vehicle trips generated by the development, and to support sustainable travel.

No monitoring is proposed for the operational phase.

4.3.5 Residual Effects and Conclusion

With the Framework CTMP and Mobility Management Plan in place, the residual impacts of the Proposed Development will be negative, likely and short-term, and of **Slight** significance, and therefore **Not Significant** in accordance with the EIA Directive.

This is in terms of the development itself isolation and cumulatively, during either the construction or operational phases of the development.

4.4 Material Assets: Built Services

The assessment of Built Services is contained within Chapter 7 of Volume II.

4.4.1 Existing Environment

4.4.1.1 Water Supply

There are a number of existing 100mm dia. watermains in close proximity to the site of the proposed development. Uisce Eireann completed an upgrade of the existing watermain along the R172 to the east of the lands in 2024 to support future growth and development in the area.

4.4.1.2 Waste Water Drainage

There is no existing wastewater infrastructure of relevance to the subject site in close proximity to any boundary of the proposed development. The nearest relevant wastewater network is an existing 600mm dia. wastewater sewer located 0.8km to the north-west of the proposed development on Tandy's Lane, off Finnabair Crescent.

4.4.1.3 Surface Water Drainage

No formal existing surface water infrastructure is located on and adjacent to the subject site of relevance to the proposed development except for a small open water course flowing south to north along the eastern site boundary. Surface Water run-off currently flows over-land in an easterly direction towards the small open water course and into the Dundalk Bay or soaks into the existing ground.

4.4.1.4 Electrical Supply

ESB maintains underground and overhead powerlines within and around the existing subject site. The ESB infrastructure of relevance to the proposed development includes the following:

- 10/20kV overhead powerlines in multiple locations throughout the site.
- A 400/230V overhead powerline adjacent to the proposed site entrance along the eastern site boundary.
- A MV/LV (10kV/20kV/440V/230V) underground cable in the northern section of the site adjacent to Bóthar Maol.

4.4.1.5 Gas Supply

There are existing underground medium pressure distribution gas mains located proximate to the subject site as follows:

- An existing 125mm diameter PE-80 4 bar gas main is located east of the proposed development along the R172.
- An existing 63mm diameter PE-80 4 bar gas main is located to the north of the proposed development along Bóthar Maol.

4.4.1.6 Telecommunications

There are existing underground Eircom telecommunications infrastructure relevant to the proposed development east and north respectively outside of the subject site.

4.4.2 Impact Assessment

4.4.2.1 Do Nothing Scenario

Alternative Development Scenario

Given the zoning and planning context, it is reasonable to expect that a similar residential development could be proposed for the site and in such case similar effects as described above would be expected.

Water Supply

In the absence of the proposed development, there would be no increase in water demand to the existing Water Supply network which is a **neutral, imperceptible i.e. non-significant, long-term** effect.

Wastewater Drainage

In the absence of the proposed development, there would be no increase in wastewater flows in the existing wastewater network which is a **neutral, imperceptible i.e. non-significant, long-term** effect.

Surface Water Drainage

In the absence of the proposed development, Surface Water runoff from the subject site would continue to flow overland towards the Irish Sea in an easterly direction. In the absence of the proposed SuDS measures being implemented, Surface Water run-off would continue to flow overland to the east towards the Irish Sea or soak into the existing ground which is a **neutral, imperceptible i.e. non-significant, long-term** effect.

Electricity/Gas and Telecommunications

In the absence of this proposed development, there would be no change to the existing electrical supply, gas supply and telecommunications networks which is a **neutral, imperceptible i.e. non-significant, long-term** effect.

4.4.2.2 Construction Phase

Water Supply

During the Construction Phase, the Contractor shall install temporary welfare facilities on site for construction personnel. The water demands during the Construction Phase arising from the Contractor's welfare facilities on the existing Water Supply network are considered to be a **neutral** and **imperceptible i.e. non-significant** effect with a **short-term** duration.

Wastewater Drainage

The Contractor's welfare facilities for construction personnel will be located on site and temporary wastewater effluent from these facilities shall be discharged to the sewerage system at a location and at a flow rate subject to the conditions of a discharge licence from Uisce Éireann. The following are the likely significant effects of the proposed scheme in the absence of mitigation measures during the construction stage:

- Temporary discharge from excavations could potentially lead to siltation, surcharge and flooding within the public wastewater system.
- Effluent from the Contractor's temporary welfare facilities could potentially lead to flooding within the sewerage system.

In the absence of mitigation measures, these potential impacts are considered to be **adverse**, **significant** and **temporary**.

Surface Water Drainage

During the construction phase, Surface Water shall be discharged to onsite settlement ponds prior to discharging to the open watercourses to the east of the site and onwards to the Irish Sea subject to agreement with Louth Co. Co. The following are the likely significant effects of the proposed scheme in the absence of mitigation measures during the construction stage:

- Mobilisation of sediments and harmful substances during the construction phase, due to exposed soil and earth movement/excavation, which may be flushed into the watercourse during rainfall events.
- Accidental spills of harmful substances such as petrol/diesel or oil during the delivery and storage of harmful substances or by leakages from construction machinery. Construction materials such as concrete and cement are alkaline and corrosive and can cause pollution in watercourses.
- Potential for building materials or silts to be washed into the new Surface Water system, causing blockages and pollution. Waterborne silt can arise from dewatering excavations, exposed ground, stockpiles and site roads. Heavy siltation or grit in the Surface Water runoff would lead to issues for the receiving watercourse.
- Temporary dewatering measures will be necessary to manage water within excavations during heavy rainfall. Water collected in temporary excavations shall be pumped to settlement ponds on site and treated before discharge to the existing watercourses subject to agreement with Louth Co. Co.

In the absence of mitigation measures, these potential impacts are considered to be **adverse**, **moderate to significant** and **temporary**.

Electricity/Gas and Telecommunications

The power demands during the construction phase on the existing electricity network are considered to be an imperceptible, neutral and short-term effect.

There is no gas infrastructure on the subject site and it is not proposed to provide gas as a utility within the proposed development. Where the excavation strategy or temporary works require any temporary diversion of local gas services on the site perimeter, this would be undertaken with prior agreement of the relevant service provider. These works are considered as **neutral** with an **imperceptible i.e. non-significant** effect and with a **short-term** duration.

There are no existing telecommunications infrastructure within the subject site of the proposed development and all existing telecommunication cables in close proximity to the subject site are located in underground ducts within the adjacent roads. As such, there will be no likely significant effects on telecommunications infrastructure during the construction phase of the proposed

development. Where the excavation strategy or temporary works require any temporary diversion of local telecommunication services or utilities on the site perimeter, this would be undertaken with prior agreement of the relevant service provider. These works are considered as **neutral** with an **imperceptible i.e. non-significant** effect and with a **short-**term duration.

4.4.2.3 Operational Phase

Water Supply

It is considered that the impacts on the existing Water Supply network are considered to be **neutral**, **not significant** and **permanent**.

Wastewater Drainage

It is considered that the impacts on the existing Wastewater network are considered to be **neutral**, **imperceptible i.e. non-significant** and **permanent**.

Surface Water Drainage

The impacts on Surface Water discharge from the site are considered to be **neutral, imperceptible i.e. non-significant** and **permanent**.

Electricity

The impact of the proposed development on the electricity supply network is expected to be **neutral, not significant** and **permanent**.

Gas

It is considered the impact on the existing gas network are **neutral, imperceptible i.e. non-significant** and **permanent**.

Telecommunications

The proposed development will increase the demand on the telecommunications systems which may potentially lead to a reduction in the level of service to existing customers. It is expected that infrastructural requirements for future development will be accommodated by utility service providers. In the absence of mitigation measures, these potential impacts are considered to be **adverse, non-significant** and **permanent**.

4.4.2.4 Cumulative Impact

Water Supply

The cumulative effects is **neutral, not significant** and **long term**.

Wastewater Drainage

The cumulative effect of wastewater drainage from the proposed development is **neutral, imperceptible i.e. non-significant** and **long-term**.

Surface Water Drainage

The cumulative effect of surface water drainage from the proposed development is **neutral, long-term** and **imperceptible i.e. non-significant**.

Gas Supply

The impact of the proposed development on the existing gas network is **neutral, imperceptible i.e. non-significant** and **permanent**.

Electrical Supply

The cumulative effect is a **neutral, not significant** and **short-term** effect.

Telecommunication

The cumulative effect is a **neutral, not significant** and **short-term** effect.

4.4.3 Mitigation

4.4.3.1 Incorporated Design

Water Supply

The proposed watermain infrastructure is designed in accordance with Uisce Éireann's 'Code of Practice for Water Infrastructure IW-CDS-5020-03 and provides appropriate capacity for the development to minimise the risk associated with low service pressure.

Wastewater Drainage

The proposed drainage system will be designed with appropriate capacity for the development to ensure self-cleansing velocities are achieved to reduce the risk of blockages and odours.

Surface Water Drainage

The proposed scheme shall incorporate SuDS treatment process which intercepts Surface Water run-off and treats the water by two stages of filtration and treatment through natural material and conveying this water to storage facilities.

Electricity Network

All proposed power cables within the development will be buried underground or internal within buildings and will be installed according to the relevant ESB Networks specifications.

Gas Supply

There is no gas infrastructure on the subject site and it is not proposed to provide gas as a utility within the proposed development.

Telecommunications Network

The proposed telecommunications infrastructure within the development will be buried underground or internal within buildings.

4.4.3.2 Construction Phases

Water Supply

During construction, the watermains shall be tested in accordance with the requirements of Uisce Éireann prior to connection.

Wastewater Drainage

The construction phase discharge of Wastewater to the existing 600mm wastewater sewer to the north-west of the subject site shall comply with the conditions of a Discharge Licence from Uisce Éireann. During construction, all new sewers shall be pressure tested and CCTV surveyed in

accordance with the Uisce Éireann Standards to identify potential defects and such defects, should they arise, shall be repaired prior to the connection.

Surface Water Drainage

The Contractor shall prepare and implement a Construction Phase Surface Water Management Plan that ensures avoidance and minimisation of effects. Surface Water storage in excavations shall be directed to on-site settlement ponds, where silt removal will be facilitated prior to discharge off site at a controlled and agreed rate in accordance with the greenfield runoff rates for the site. In order to reduce and minimise the risk on impacting the existing water environment from material spillages, all oils, solvents and paints used during construction will be stored within temporary bunded areas or chemical storage containers.

Electricity Network

The ESB shall install all of the new incoming supplies to the proposed development. The ESB shall also liaise with residents and keep existing customers fully informed of any brief outages which may be required due to the diversion and undergrounding of the existing overhead 38kV lines or connections to the proposed development. The Contractor shall ensure that construction works on site adhere to the ESB Networks / HSA "Code of Practice for Avoiding Danger from Overhead Electricity Lines".

Gas Supply

There is no gas infrastructure on the subject site and it is not proposed to provide gas as a utility within the proposed development.

Telecommunications Network

The relevant utility provider shall install the new incoming supplies to the proposed development and shall liaise with existing customers to advise of possible outages in order to facilitate the connections. The works shall be carried out such that they minimise disruption to surrounding areas. .

4.4.3.3 Operational Phase

Water Supply

The proposed Water Supply system shall be commissioned and subject to a, as a minimum, monthly operational inspection and maintenance regime to ensure the system keeps operating within the design specifications. .

Wastewater Drainage

Uisce Éireann shall implement an operational inspection and maintenance regime to ensure the system keeps operating within the design specifications..

Surface Water Drainage

Surface Water runoff from the proposed development will be managed in accordance with the requirements of the Greater Dublin Strategic Drainage Study (GDSDS), CIRIA SuDS and the requirements of the Louth County Council Water Services Department (LCC WSD). The Surface Water management proposals shall serve to reduce the overall impact of the proposed development on the existing environment. The features to be maintained include all SuDS features. .

Electricity Network

The proposed electricity supply system shall be commissioned and subject to a regular operational inspection and maintenance regime, in accordance with the Utility providers procedures, to ensure the system keeps operating within the design specifications..

Gas Supply

There is no gas infrastructure on the subject site and it is not proposed to provide gas as a utility within the proposed development.

Telecommunications Network

The proposed telecommunications system shall be commissioned and subject to a regular operational inspection and maintenance regime, in accordance with the Utility providers procedures, to ensure the system keeps operating within the design specifications.

4.4.4 Residual Impact Assessment

4.4.4.1 Water Supply, Foul and Surface Water Drainage

The provision of a Sustainable Urban Drainage System (SuDS) for the proposed development will ultimately limit Surface Water run-off to 64.50 l/s and 5 l/s from the existing subject site which is the allowable green-field run-off rate. This is a **neutral, imperceptible i.e. not significant** and **permanent** effect.

Uisce Éireann shall implement an operational inspection and maintenance regime to ensure the system keeps operating within the design specifications. This is a **positive, significant** and **permanent**.

The proposed Water Supply system shall be commissioned and subject to a, as a minimum, monthly operational inspection and maintenance regime to ensure the system keeps operating within the design specifications. This is a **positive, significant** and **permanent**.

4.4.4.2 Electrical, Gas and Telecommunications Network

The proposed electricity supply system shall be commissioned and subject to a regular operational inspection and maintenance regime, in accordance with the Utility providers procedures, to ensure the system keeps operating within the design specifications. This is a **neutral, significant** and **long-term** effect.

There is no gas infrastructure on the subject site and it is not proposed to provide gas as a utility within the proposed development. Therefore, it is considered the impact of the proposed development on the existing gas network is **neutral, imperceptible i.e. not significant** and **permanent**.

The proposed telecommunications system shall be commissioned and subject to a regular operational inspection and maintenance regime, in accordance with the Utility providers procedures, to ensure the system keeps operating within the design specifications. This is a **neutral, significant** and **long-term** effect.

4.4.5 Monitoring

4.4.5.1 Surface Water

During the construction of the Surface Water drainage, the system shall be inspected and monitored for compliance with the design and relevant Louth Co. Co. and GDSDS standards in accordance with the Preliminary Inspection Plan. The requisite air and pressure testing shall be carried out on all sewer installations during construction while exfiltration testing shall be carried out on all manholes. Records of these tests shall be maintained by the Contractor. The connection to the existing open water course will not be made until all the works are complete within each Phase and temporary surface water management will remain in place until this time to ensure only clean uncontaminated surface water is discharged to the existing open water course.

4.4.5.2 Wastewater

During the construction of the Wastewater drainage, the system shall be inspected, tested and monitored in accordance with the requirements of the relevant Uisce Éireann Code of Practice. Records of these tests shall be maintained by the Contractor as required and shall be witnessed by Uisce Éireann in accordance with the relevant Quality Procedures. The connection to the existing Wastewater network will not be made until all the works are complete within each Phase and temporary Wastewater management associated with the Contractor's compound will remain in place until this time.

4.4.5.3 Water Supply

During the construction of the water supply network, the system shall be inspected, tested and monitored in accordance with the requirements of the relevant Uisce Éireann Code of Practice. Records of these tests shall be maintained by the Contractor as required and shall be witnessed by Uisce Éireann in accordance with the relevant Quality Procedures. The connection to the existing water supply network will not be made until all the works are complete within each Phase and temporary water connection associated with the Contractor's compound will remain in place until this time.

4.4.5.4 Electrical Supply

The ESB shall monitor the existing and proposed networks during the diversion and undergrounding of the existing over-head 20kV and 38kV powerlines. The ESB shall carry out ongoing testing and commissioning of the installed infrastructure during construction.

4.4.5.5 Gas Supply

There is no gas infrastructure on the subject site and it is not proposed to provide gas as a utility within the proposed development. Therefore, monitoring of this utility is not required.

4.4.5.6 Telecommunications

The incoming telecommunications provider shall monitor the existing and proposed networks during the installation of the proposed telecommunications network throughout the site during construction. The incoming telecommunications provider shall carry out ongoing testing and commissioning of the installed infrastructure during construction.

4.5 Material Assets: Waste

The assessment of Material Assets: Waste is contained within Chapter 8 of Volume II.

4.5.1 Existing Environment

The quaternary soils beneath the site are categorised as follows:

- Main site area: Till derived from Lower Palaeozoic sandstones and shales.
- Eastern site boundary near Dundalk estuary: Marine gravel and sands.
- Along R172 Blackrock Road and Finnabair Crescent: Irish Sea Till derived from Lower Palaeozoic sandstones and shales.

The bedrock is mapped as the Clontail Formation, consisting of calcareous red-mica greywacke with distinctive brown-red biotite.

An invasive species survey in July 2021 found no listed invasive alien plant species. However, Cherry Laurel, Buddleja, and Russian vine were detected, which can be managed during site clearance.

In 2023, Cherry Laurel was recorded along hedgerows to the north and west of the site, but no listed invasive species were found.

4.5.2 Impact Assessment

4.5.2.1 Do Nothing Scenario

In the 'Do Nothing' scenario, the proposed development does not proceed and there would be no excavation, construction or operational waste generated at the site. There would, therefore, be no additional demand or loading on waste management infrastructure locally or nationally and thus there would be a neutral effect on the environment in terms of waste. However, given the zoning and planning context, it is reasonable to expect that a similar residential development could be proposed for the site and in such case similar effects as described above would be expected.

4.5.2.2 Construction Phase

During the Construction Phase, various materials will need to be transported to and from the site, generating construction and excavation-related wastes. This could impact the local waste management network.

A Construction Waste Management Plan (CWMP) is contained within the Outline Construction Environmental Management Plan (CEMP) which has been prepared by DOBA (2025) for Construction Phase of the proposed development and is submitted under separate cover.

Five concrete foundations on the site will be removed before construction begins.

No buildings on site require an asbestos survey. If asbestos-containing materials (ACMs) are found, they will be handled according to relevant regulations and codes of practice.

The proposed development will require excavation for the following non-exhaustive list of activities with associated approximate volumes of the materials to be excavated:

- Topsoil: 53,000m^3
- Subsoils from reduced level excavations: 32,500m^3
- Subsoils for main drainage and attenuation: 10,000m^3
- Rock for main drainage and attenuation : 5,000m^3
- Subsoils for site services: 10,000m^3

The re-use of clean, inert / non-hazardous excavation material as landscaping or engineering fill will also be considered following appropriate material testing and risk assessment to ensure the material is suitable for its proposed end use.

The following quantities are assumed to be reused in the proposed development:

- Topsoil: 28,000m^3
- Subsoils from reduced level excavations: 6,500m^3
- Rock for main drainage: 5,000m^3

Where excavation material may not be re-used within the proposed works the Contractor will endeavour to send material for recovery or recycling so far as is reasonably practicable or disposal to an appropriate licensed landfill in accordance with the Landfill Directive.

The following quantities are assumed to be removed offsite for reuse or to an appropriate licenced landfill:

- Topsoil: 25,000m^3
- Subsoils from reduced level excavations: 26,000m^3
- Subsoils for main drainage and attenuation: 10,000m^3
- Subsoils for site services: 10,000m^3

Potentially contaminated materials will be tested and classified as non-hazardous or hazardous.

- Waste will be segregated on-site for reuse and recycling.
- Excavated soil and stone will be stockpiled temporarily on-site.
- Unavoidable waste removal will be sent to licensed waste facilities.

Potentially contaminated materials encountered during construction will be tested and classified as either non-hazardous or hazardous. Waste generated on-site will be segregated to facilitate reuse and recycling. Excavated soil and stone will be temporarily stockpiled on-site, and any unavoidable waste removal will be sent to licensed waste facilities.

Waste facilities must be authorised under the Waste Management Act 1996 and hold appropriate permits or licenses. The contractor is responsible for ensuring the validity of these authorisations and providing evidence of the capacity for waste acceptance. The Outline Construction Environmental Management Plan (CEMP) uses benchmarks from the BRE SMARTWASTE Plan (2012) to estimate construction waste quantities. The Construction Phase is expected to generate approximately 9,403m³ of waste from buildings. The contractor will aim to minimise waste generation and reduce the amount of waste removed from the site for recovery or disposal. Imported aggregate, fill material, and topsoil will be sourced from reputable, clean origins to prevent environmental contamination.

Waste will be produced from the construction of dwelling units and ancillary infrastructure, including off-cuts of timber, broken concrete blocks, plasterboard, tiles, and packaging waste. These materials will be segregated at the source, stored in appropriately sized receptacles, and transferred offsite for processing, recycling, and recovery. Disposal will be considered a last resort.

It is not expected that hazardous waste will be generated. However, if any hazardous waste is produced, it will be stored minimally on-site and removed regularly by authorised contractors. Waste from construction workers, such as organic/food waste, recyclables, and mixed non-recyclables, will be managed appropriately. Office and canteen waste will be collected by authorised waste collectors.

The contractor must produce a Construction Waste Management Plan (CWMP) for approval by Louth County Council, detailing waste minimisation, reuse, recycling procedures, and compliance with regulations. The impact on waste recovery and disposal during the Construction Phase is expected to be negative, short-term, and slight, which is overall ***not significant***.

4.5.2.3 Operational Phase

The Operational Phase of the proposed development will increase municipal waste production in the region, placing additional demand on waste collectors and treatment facilities. However, as the area is predominantly residential, waste collection is already a common practice.

An Operational Waste Management Plan (OWMP) has been prepared to provide a strategy for handling, storing, collecting, and transporting waste generated from the site. This plan aims to prevent issues related to litter and pollution. Residents will be required to separate waste into three main streams: Mixed Non-Recyclables (MNR), Dry Mixed Recyclables (DMR), and Organic (food) Waste (OW). Bins will be clearly labelled and color-coded to avoid cross-contamination, with restricted access to the bin store for residents only.

Private waste collection contractors in Haggardstown, Co. Louth, will service the development. These contractors must have the appropriate permits for the types of waste they collect, and all waste must be transported to registered or licensed facilities. Staggered collection times are recommended to reduce the number of bins emptied at once and minimise the time waste collection vehicles spend on-site.

The OWMP considers all legal requirements, policies, and best practices. It ensures that the waste storage area is incorporated into the development's design, providing sufficient capacity for segregated waste. The plan aims to maximise recycling, reuse, and recovery, reducing costs and diverting waste from landfills.

The capacity of waste collection companies and facilities in County Louth has been planned to accommodate a growing population. The development will provide infrastructure and services to help residents segregate waste at the source, reducing non-recyclable waste generation. The proposed development will be added to existing waste collection routes.

The potential impact of the Operational Phase on municipal waste disposal is expected to be long term, negative, direct, and slight, which is overall ***not significant.***

4.5.2.4 Cumulative Impact

The capacity of waste collection companies and waste management facilities in County Louth have been designed with forward planning and expansion in mind to cater for a growing population. It is necessary that all the developments provide the infrastructure and services to assist residents to segregate domestic waste at source, in order to reduce the generation and disposal of non-recyclable mixed waste. Existing waste collections currently take place in the local area and during the Operational Phase, the proposed development will be added to an existing collection route. The likely effect will be neutral and not significant on waste management facilities in the area in the long term.

4.5.3 Mitigation

4.5.3.1 Incorporated Design

The following measures have been incorporated into the design:

- Buildings have been designed with material efficiency in mind;
- Opportunities to achieve on-site and off-site reuse and recycling of waste have been identified; and
- Dedicated, secure waste segregation areas have been selected for the duration of the enabling works.

4.5.3.2 Construction Phase

The waste management objective during the Construction Phase is to prevent waste generation and to re-use, recycle, or recover waste materials where possible. Waste materials will be separated at the source and managed according to the Construction Waste Management Plan (CWMP) within the Outline Construction Environmental Management Plan (CEMP) and the Contractor's CEMP. Detailed calculations of topsoil, subsoil, and green waste quantities will be prepared, and soils will be tested to confirm they are clean, inert, or non-hazardous before construction begins.

A policy of 'as needed' ordering and strict purchasing procedures will be implemented to minimise waste generation. The Contractor will ensure that imported aggregate, fill material, and topsoil are from reputable, clean sources to prevent environmental contamination. Waste materials generated during construction will be stored in appropriately sized receptacles and transferred offsite for processing, recycling, and recovery. Materials unsuitable for reuse or recovery will be separately collected, with disposal considered a last resort.

A competent and fully permitted waste management company will be employed to manage construction waste. All waste materials will be transported to authorized facilities with the relevant permits for acceptance and treatment. Although hazardous waste generation is not anticipated, any encountered hazardous soil or historically deposited waste will be managed according to a Hazardous/Contaminated Soil Management Plan, with notification to Louth County Council.

Waste generated by construction workers will be stored in wheelie bins on-site and collected by authorised waste collectors. All waste quantities and types will be recorded and retained on-site for the duration of the Construction Phase. These measures ensure compliance with the Waste Management Act 1996, associated regulations, and the National Waste Management Plan for a Circular Economy 2024-2030, promoting sustainable resource consumption.

The Contractor will appoint a trained Construction Waste Manager (CWM) responsible for implementing the CWMP. The CWM will instruct site personnel on compliance, provide training, and ensure maximum segregation at the source. Each Sub-Contractor will assign a staff member to ensure ongoing compliance with the CWMP.

To avoid the introduction or dissemination of invasive species, the Contractor will prepare a project-specific Invasive Alien Plant Species (IAPS) standard operating procedure document. This document will include bio-security measures, validation of machinery and vehicles, certification of imported materials, regular site inspections, and effective site hygiene practices.

4.5.3.3 Operational Phase

An Operational Waste Management Plan (OWMP) has been prepared by DOBA (2025) for the proposed development. This plan outlines a waste strategy that considers legal requirements, policies, and best management guidelines. The Waste Storage Area (WSA) has been incorporated into the design of the development to ensure efficient waste handling during the Operational Phase. The OWMP aims to achieve high levels of recycling, reuse, and recovery, reducing costs and diverting waste from landfills. The designated WSA provides sufficient storage capacity for segregated waste.

Residents will be required to separate waste into three main streams: Mixed Non-Recyclables (MNR), Dry Mixed Recyclables (DMR), and Organic Waste (OW). Each bin will be clearly labelled and color-coded to prevent cross-contamination, with clear instructions posted above the bins. Access to the bin store will be restricted to residents via a code or electronic fob. Infrequently generated waste, such as textiles, furniture, and WEEE, will be temporarily stored within residents' units and disposed of appropriately.

The OWMP aims to ensure the highest possible levels of waste reduction, reuse, and recycling. The management company will provide new tenants with leaflets encouraging good waste segregation and pictorial information detailing the waste streams. Clauses supporting waste segregation targets will be included in relevant legal documents, such as tenancy agreements. The facilities management company must employ suitably permitted or licensed contractors for off-site waste management, ensuring no adverse environmental impacts.

The OWMP has reviewed policy and best practice guidance to ensure sustainable waste and recycling management. It aligns with the requirements of the Louth County Council Development Plan 2021-

2027 and Ireland's National Waste Policy, ensuring a high level of recycling, reuse, and recovery at the development.

4.5.4 Residual Impact Assessment

The implementation of the mitigation measures outlined in Chater 8 Material Assets: Waste will ensure that high rates of reuse, recovery and recycling are achieved at the site during the Construction and Operational Phases. It will also ensure that European, National and Regional legislative waste requirements with regard to waste are met and that associated targets for management of waste are achieved.

The residual effects on waste management are considered to be considered slight, neutral, direct and short-term for the Construction Phase, which is overall ***not significant*** and neutral, direct and slight in the long-term for the Operational Phase, which is overall ***not significant***.

4.5.5 Monitoring

4.5.5.1 Construction Phase

To manage and minimise waste during the Construction Phase, site control measures will include signage on site office and welfare bins to distinguish environmental and domestic waste bins, and briefings for all sub-contractors via induction handouts.

Regular waste audits will be conducted according to the Contractor's Project Specific Waste Audit Plan. These audits will systematically study waste management practices to highlight problems and benefits of prevention and minimization. The audits will enable the Contractor to monitor the quantity and type of waste produced by different sub-contractors and identify opportunities for waste reduction throughout the project stages. The audits will detail raw material inputs and the quantity, type, and composition of all waste from the site.

The Contractor will record the quantity in tonnes and types of waste and materials leaving the site during the works. Records will include the name, address, and authorization details of all facilities and locations to which waste and materials are delivered, along with the quantity of waste in tonnes delivered to each facility. These records will show materials that are recovered and disposed of.

The audits will highlight corrective actions that may be taken in relation to management policies or site practices to achieve further waste reductions. A tracking system will be used to determine the success or failure of these corrective actions. Summary audit reports outlining types, quantities of waste arising, and their final treatment method will be sent to the relevant authority for their information.

4.5.5.2 Operational Phase

The building management company and future residents will be responsible for maintaining the bins and storage areas in good condition. The waste strategy outlined in the Operational Waste Management Plan (OWMP) ensures sufficient storage capacity for the estimated quantity of segregated waste. Designated areas for waste storage will provide ample room for the required receptacles, adhering to the strategy's details.

4.6 Land & Soils

The assessment of Land & Soils is contained within Chapter 9 of Volume II.

An assessment of the potential impacts on the existing land, soils and geology was carried out by Enviroguide Consulting (a DNV Company). The assessment was carried out taking cognisance of appropriate national guidelines and standards for Environmental Impact Assessment using data collected from a detailed desk study, the results of the ground investigation, a site walkover survey and review of all relevant drawings and documents pertaining to the Proposed Development and site.

4.6.1 Existing Environment

The soils at the site are varied and include different types depending on the location:

- Main Site Area: The soils here are primarily till derived from Lower Palaeozoic rocks, classified as deep, well-drained, and mainly acidic.
- Eastern Site Boundary (near Dundalk estuary): This area features beach sands and gravels.
- Along R172 Blackrock Road and Finnabair Crescent: The soils are a mix of Irish Sea till, which is poorly drained and mainly acidic, and made ground.

The bedrock beneath the site is part of the Clontail Formation, consisting of various types of greywackes and sandstones. Although no bedrock outcrops were seen during the site walkover, they have been mapped across the site. There are no karst features within the site or nearby.

The ground conditions observed during site investigations include:

- Topsoil
- Various types of clay and gravel, some with cobble and boulder content
- Highly weathered greywacke, appearing as gravel-sized fragments in a silty clay matrix
- Made ground with clay containing glass and ceramic remnants, particularly in the eastern part of the site
- Bedrock encountered at depths between 1.7 and 3.6 meters below ground level, dipping towards the southeast.

4.6.2 Impact Assessment

4.6.2.1 Do Nothing Scenario

In the "Do Nothing" Scenario, the Proposed Development does not proceed, and the site remains undeveloped in the short term. However, given the zoning and planning context in the Louth County Development Plan (2021–2027), a similar residential development could be proposed. Therefore, the types of construction and operational phase impacts assessed in this chapter of the EIAR may still occur in the future under a different development proposal. This assessment remains relevant as an indication of the likely nature and scale of impacts on land, soil, and geology associated with residential development on the site.

4.6.2.2 Construction Phase

The potential impacts associated with the construction phase of the Proposed Development are summarised as follows:

- The site will change from agricultural land to residential use, covering 17.6 hectares, resulting in a 'negative' 'significant' and 'permanent' impact, particularly in the context of the EIA Directive, associated with the loss of undeveloped land.
- Excavation will remove soils, subsoils, and bedrock, with some materials reused onsite and surplus removed offsite, resulting in a 'negative', 'moderate' and 'permanent' impact on the underlying soils at the site and is considered non-significant in the context of the EIA Directive.
- Soil quality tests show minor contamination. Excavation and re-use of soil onsite will follow control procedures, including soil quality testing, to ensure suitability for the Proposed Development. The reuse of soils onsite will have a 'neutral', 'imperceptible', and 'permanent' impact on the quality of shallow soils, and is considered non-significant in accordance with the EIA Directive.
- In the unmitigated scenario, the use of cementitious materials may result in a 'negative', 'moderate' and 'long-term' impact on existing quality of soil within a localised area underlying the site. This is considered non-significant in the context of the EIA Directive.
- In the unmitigated scenario, the potential accidental release of deleterious materials including fuels and other materials being used onsite could potentially result in a 'negative', 'moderate to significant', 'long-term' impact on the receiving soil and geology depending on the nature of the incident. This impact is considered significant in the context of the EIA Directive due to the potential for long-term degradation of the impacted soils in the absence of mitigation.
- The eastern boundary of the site is within the Dundalk Bay geological heritage area. In a worst-case scenario, there is a potential for fuel spill from the works flowing over the road surface and entering the Dundalk Bay geological heritage site. In this unlikely scenario, there is a potential 'negative' 'slight' and 'medium- term' impact on the receiving geological heritage site. The impact is considered slight and insignificant in the context of the EIA Directive given the scale of the feature, and that any impact would be localised, but construction will occur within the existing road, with minimal impact expected.
- The combined effects of exposure of excavated soils to elements, construction traffic, and temporary stockpiling will have a potential 'negative,' slight' and 'long term' impact on the natural strength of the materials and is considered non-significant in the context of the EIA Directive.
- The importation of aggregate fill materials will have a 'neutral,' 'imperceptible' and 'permanent' impact on the source site
- Excavation and reuse of soil may affect soil structure, leading to a slight and long-term impact. Importing fill materials will have a neutral and imperceptible impact on the site and is considered imperceptible and non-significant in the context of the EIA Directive taking account of the fact that the statutory consent process would have required the necessary environmental impacts to be assessed and mitigated as appropriate at the source site.

4.6.2.3 Operational Phase

Taking account of the design of the Proposed Development, it is concluded that there will be no likely significant impacts on the receiving land, soil, or geological environment during the operational phase. The predicted effects are considered to be imperceptible and not significant in the context of the EIA Directive.

4.6.2.4 Cumulative Impact

There cumulative impacts on land, soil, and geology during the construction phase are summarised as follows:

- Excavated materials from the site will be sent to the same waste facilities as other local developments. All surplus soils and subsoils will be removed offsite according to regulations, resulting in an indirect 'neutral', 'imperceptible' and 'permanent' impact on land, soils, and geology and is considered non-significant in the context of the EIA Directive.
- Aggregates for the development will be sourced from reputable suppliers, ensuring sustainability and compliance with statutory consents. This will have an indirect, 'neutral', 'imperceptible' and 'permanent' impact on the geological environmental at the source site and is considered non-significant in the context of the EIA Directive.

There will be no other cumulative effects on land, soil and geology during the operational phase of the Proposed Development.

4.6.3 Mitigation

4.6.3.1 Construction Phases

An Outline Construction Environmental Management Plan (OCEMP) has been prepared by DOBA (DOBA, 2025; submitted with the planning application under separate cover). The OCEMP address construction waste, construction environmental management (including a surface water management plan) and construction traffic management. Following appointment, the contractor will be required to further develop the OCEMP and prepare and project specific CEMP, for approval by Louth County Council prior to any works commencing. The project specific CEMP will provide detailed construction phasing, waste management and methods to manage and prevent any potential emissions to ground and surface water with regard to the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA-C532', CIRIA, 2001). The project specific CEMP will take cognisance of measures outlined in the EIAR and OCEMP submitted with the planning application.

The project specific CEMP will be implemented for the duration of the construction phase, covering construction and waste management activities that will take place during the construction phase of the proposed development.

4.6.3.2 Operational Phase

There is no requirement for mitigation measures for the operational phase of the Proposed Development.

4.6.4 Residual Impact Assessment

Overall, there are no significant residual impacts on land, soils and geology anticipated regarding the construction phase and operational phase of the Proposed Development. The predicted residual effects are considered to be imperceptible and not significant in the context of the EIA Directive.

4.6.5 Monitoring

During the construction phase, the following monitoring measures will be implemented to minimise environmental impacts and ensure compliance with relevant standards during construction:

- Routine inspections during refuelling and concrete works to ensure compliance with mitigation measures.
- Monitoring during excavations to protect water quality and ensure effective implementation of protective measures.
- A qualified person will monitor excavations in made ground to identify and properly dispose of any contaminated material.
- A dust monitoring program will be in place to ensure compliance with air quality standards, with dust levels monitored at nearby sensitive locations.
- Regular materials management and waste audits will track soil management, record-keeping, and traceability of all materials and waste removed from the site.

There are no monitoring requirements specifically in relation to land, soil and geology during the operational phase of the Proposed Development.

4.7 Water

The assessment of Water is contained within Chapter 10 of Volume II.

An assessment of the potential impacts on the existing hydrological and hydrological environmental was carried out by Enviroguide Consulting (a DNV Company). The assessment was carried out taking cognisance of appropriate national guidelines and standards for Environmental Impact Assessment using data collected from a detailed desk study, the results of the ground investigation, a site walkover survey and review of all relevant drawings and documents pertaining to the Proposed Development and site.

4.7.1 Existing Environment

4.7.1.1 Hydrogeology

- The bedrock aquifer of the Clontail Formation beneath the site is within the Louth Groundwater Body (GWB).
- The bedrock aquifer is classified by the GSI (GSI, 2025) as a Poor Aquifer (Pl) which is generally unproductive except for local zones thereby indicating low capacity of the aquifer at the site to accept recharge via infiltration of rainfall.
- Measured groundwater levels recorded between 3.1mbGL and 8.8mbGL across the site (GES, 2018 and IGSL, 2023).
- The GSI has a assigned a groundwater vulnerability rating of 'Extreme' (E) and 'Rock at or Near Surface or Karst' for the groundwater beneath the majority of the site (GSI, 2025). While a groundwater vulnerability rating of 'High' (H) has been assigned by the GSI (GSI, 2025) to the groundwater in the north of the site.
- There are 20No. groundwater sources within a 2km radius of the site.
- Infiltration tests results indicate that the soil and subsoil are of low permeability with limited to no infiltration capacity from the ground surface to the underlying aquifer through the clay subsoils present at the site (IGSL, 2013).
- Based on the measured groundwater levels ranging from 3.1mbGL and 8.8mbGL across the site (GES, 2018 and IGSL, 2023), the groundwater flow direction is inferred to be eastward towards the Inner Dundalk Bay.
- The main groundwater discharges will be to the rivers and streams crossing the GWB, which reflect short groundwater flow paths.

4.7.1.2 Hydrology

- The site is located within the Newry, Fane, Glyde and Dee WFD Catchment (Catchment I.D.: 06), the Castletown_SC_020 WFD Sub-catchment (Sub-Catchment ID 06_12) and the Haggardstown_010 WFD River Sub-basin (EU Code: IE_NB_06H080570).
- The Inner Dundalk Bay transitional waterbody (EU Code: IE_NB_040_0100) is located approximately 0.03 km east of the site at its closest point.
- There are two (2No.) unnamed streams located at the eastern boundary of the site adjacent to the R172 Blackrock Road (i.e., at the entrance to the Proposed Development) and to the north of Bóthar Maol. Both streams ultimately discharge in a northeast direction towards the Inner Dundalk Bay transitional waterbody (EU Code: IE_NB_040_0100) approximately 0.12 km downstream of the site and the point at which the two unnamed streams converge.

- The flood risk to and from the development as proposed is considered to be LOW (IE Consulting, 2025. Site-Specific Flood Risk Assessment Report). The development as proposed is not expected to result in an adverse impact to the hydrological regime of the area or increase flood risk elsewhere and is therefore considered to be appropriate from a flood risk perspective
- There are two (2No.) Natura 2000 sites that are identified with a potential hydraulic connection to the site and Proposed Development
    - Dundalk Bay SAC (Site Code: 000455).
    - Dundalk Bay SPA (Site Code: 004026).
- There is one (1No.) proposed Natural Heritage Area (pNHA) identified with a potential hydraulic connection to the site and Proposed Development (refer to Figure 10 8):
    - Dundalk Bay pNHA (Site Code: 000455).

4.7.2 Impact Assessment

4.7.2.1 Do Nothing

In the "Do Nothing" Scenario, it is assumed that the Proposed Development does not proceed. The site, zoned as 'A2 New Residential Phase 1' and 'H1 Open Space' under the Louth County Development Plan (2021–2027), would remain as undeveloped lands in the immediate term. However, given the zoning and planning context, it is reasonable to expect that a similar residential development could be proposed for the site. Therefore, while the site would remain undeveloped in the short term, the potential for future development remains. As such, even in the absence of the Proposed Development, it is considered that the types of construction and operational phase impacts assessed in this chapter of the EIAR may still occur in the future, albeit under a different development proposal. In this scenario, the current assessment remains relevant as an indication of the likely nature and scale of impacts associated with residential development on the site.

4.7.2.2 Construction Phase

During the construction phase, there are several potential significant effects on the hydrological and hydrogeological flow regime. Excavation for building foundations, foul water, and surface water drainage infrastructure may intersect groundwater levels, requiring localised dewatering or sump pumping on a temporary basis. This may cause a temporary drawdown of local groundwater levels, but the impact is expected to be localised. The potential impact on the groundwater levels and flow regime associated with the works will be 'negative', 'slight' and 'temporary' and is considered non-significant in the context of the EIA Directive

Receiving water quality may be affected by various sources of contamination, including storage and use of fuels, oils, and chemicals, use of concrete and cementitious materials, runoff with entrained sediment, sediment in groundwater during dewatering, accidental release of wash-water or foul water, and release of foul water during connection to live sewers. Contaminants may infiltrate to the substrate and bedrock aquifer, migrate via overland flow, enter unnamed streams, or infiltrate through subsoils during excavations. In a worst case, un-mitigated scenario there is a potential 'negative', 'moderate to significant' (i.e., significant in the context of the EIA Directive) and 'medium

term' / 'long-term' impact to the underlying groundwater quality and / or receiving downstream waterbodies depending on the nature of the incident.

The potential receptors include groundwater and surface water, such as the underlying Clontail Formation bedrock aquifer, two unnamed streams, Upper Marshes Stream, Inner Dundalk Bay transitional waterbody, and Outer Dundalk Bay coastal waterbody. Additionally, Natura 2000 sites such as Dundalk Bay SAC, Dundalk Bay SPA, and Dundalk Bay pNHA may be affected.

4.7.2.3 Operational Phase

During the operational phase of the proposed development, there will be no discharges to ground from drainage systems, with only rainfall on public open spaces infiltrating to the ground. The development will increase hardstanding areas, but the impact on groundwater flow will be minimal due to limited infiltration capacity and the site's proximity to the coast. This will result in a negative, imperceptible (i.e., not significant), and permanent effect on the hydrogeological flow regime within a localized zone of the aquifer.

Surface water runoff will undergo a two-stage treatment process, including natural and proprietary SuDS, before discharging into nearby streams. This ensures a neutral, imperceptible (i.e., not significant), long-term impact on the quality of receiving hydrological receptors, including the Inner Dundalk Bay transitional waterbody.

Foul water will be directed to the Dundalk Waste Water Treatment Plant (WWTP), with planned upgrades to accommodate the development. Although there have been exceedances in effluent discharge limits, the additional load from the development is considered insignificant. The treated effluent will meet required standards, resulting in a **neutral, imperceptible** (i.e., no significant) and **long-term** impact on the receiving water quality and Water Framework Directive (WFD) status of the Fane Estuary transitional waterbody.

4.7.2.4 Cumulative Impact

The proposed development's cumulative effects on water resources and water quality are minimal. The connection to the upgraded watermain on the R172 Blackrock Road is feasible without network upgrades, ensuring no cumulative impacts on the water supply. Wastewater will be treated at Dundalk WWTP, with necessary upgrades to the Coes Road Pumping Station planned for 2030, ensuring capacity for the development. Surface water runoff will be managed effectively, preventing significant impacts on water quality or flood risk. Overall, the development is designed to minimise cumulative impacts on water resources and quality.

4.7.3 Mitigation

4.7.3.1 Construction Phases

An Outline Construction Environmental Management Plan (OCEMP) has been prepared by DOBA (DOBA, 2025; submitted with the planning application under separate cover). The OCEMP address construction waste, construction environmental management (including a surface water management plan) and construction traffic management. Following appointment, the contractor will be required to further develop the OCEMP and prepare and project specific CEMP, for approval by Louth County

Council prior to any works commencing. The project specific CEMP will provide detailed construction phasing, waste management and methods to manage and prevent any potential emissions to ground and surface water with regard to the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA-C532', CIRIA, 2001). The project specific CEMP will take cognisance of measures outlined in the EIAR and OCEMP submitted with the planning application.

The project specific CEMP will be implemented for the duration of the construction phase, covering mitigation works that 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 water and surface runoff.
- Control of Management of works nears water courses.
- Control of Management of materials from off-site sources.
- Appropriate fuel and Chemical handling, transport and storage.
- Management of accidental release of contaminants at the site.

4.7.3.2 Operational Phase

The design of the Proposed Development aligns with the objectives of the Water Framework Directive (2000/60/EC as amended) to prevent or limit any potential impact on water quality of the receiving environment.

Regular operational monitoring and maintenance of drainage and Sustainable Drainage Systems (SuDS) measures will be part of the overall management strategy to ensure no impacts on water quality and quantity during the operational phase.

The discharge of treated operational surface water from the Proposed Development to the two unnamed streams along the eastern and northern boundaries of the site, and ultimately to the Inner Dundalk Bay transitional waterbody, is considered to have negligible potential for significant effects on downstream sensitivities. This is due to the incorporation of SuDS measures and a petrol interceptor in the fundamental scheme design.

4.7.4 Residual Impact Assessment

Overall, considering the design, avoidance, remedial and mitigation measures, the residual effects regarding the construction phase and operational phase of the Proposed Development are considered 'imperceptible' to the receiving water environment (hydrology and hydrogeology) and considered non-significant in the context of the EIA Directive.

The Proposed Development will not result in deterioration of the status of hydrologically connected waterbodies, will not compromise the objective of achieving 'good' surface water status or good ecological potential and will remain compliant with the WFD and relevant national legislation. Overall, there will be a 'neutral to positive', 'slight to moderate' and 'long-term' impact on the WFD Status and is considered non-significant in the context of the EIA Directive

4.7.5 Monitoring

4.7.5.1 Construction Phase

During the construction phase, several monitoring measures will be put in place to protect water quality. Inspections will be carried out during excavations and other groundworks to ensure that protective measures are effective. Discharges to surface water and foul sewers will be monitored as required by statutory consents. Routine monitoring and inspections will be conducted during refuelling and concrete works to ensure compliance with avoidance, remedial, and mitigation measures.

Surface water samples will be collected at the start of the works to establish a baseline scenario, with monitoring locations agreed upon with Louth County Council (LCC) in advance. Daily visual inspections and water sampling of the watercourse will be performed to ensure no sediment or pollutant deposits are present. Monthly water samples will be taken during the construction phase to demonstrate compliance with surface water regulation standards, with monitoring locations agreed upon with LCC.

The proposed surface water monitoring suite will include parameters such as pH, electrical conductivity, total suspended solids, Total Petroleum Hydrocarbons, nitrate, ammonia, and Chemical Oxygen Demand (COD). The final suite of analysis will be agreed upon with LCC before the works commence.

4.7.5.2 Operational Phase

Throughout the operational phase of the Proposed Development, regular monitoring and maintenance of drainage and Sustainable Drainage Systems (SuDS) measures will be conducted. Additionally, surface water quality monitoring will be carried out twice a year for two years at the outlet to the existing public surface water sewer after the construction phase is completed. This monitoring will ensure that the discharge meets all relevant Environmental Quality Standards (EQS) limits. The specific parameters for analysis will be agreed upon with Louth County Council (LCC) in advance.

4.8 Biodiversity

The assessment of Biodiversity is contained within Chapter 11 of Volume II.

The Biodiversity Chapter details the Ecological Impact Assessment (EcIA) of the Proposed Development, which assesses the potential effects of same 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.

4.8.1 Existing Environment

Four protected designated sites were considered to fall within the zone of influence (ZOI) of the Proposed Development, all associated with Dundalk Bay to the east of the Site; Dundalk Bay Special Area of Conservation (SAC), Dundalk Bay Special Protection Area (SPA), Dundalk Bay proposed Natural Heritage Area (pNHA) and the Dundalk Bay RAMSAR Site. These protected sites all overlap and are all linked to the Site of the Proposed Development via hydrological, air and human pathways. The potential impacts to the SAC and SPA are assessed in detail in the Appropriate Assessment (AA) Screening and Natura Impact Statement (NIS) that accompany this application under separate covers. The pNHA and RAMSAR site assessed in this Chapter are covered by proxy by the mitigation detailed in the NIS; as the potential impacts and necessary mitigation identified are analogous with those detailed for the SAC/SPA, due to the similarities in the important features for which all four sites are designated (i.e., coastal/wetland habitats and waterbirds). However, their assessment is also detailed in this Chapter for clarity.

The Site comprises a set of fields once planted as arable crops but since left unmanaged for a number of years, is largely covered in rank, dry meadow grassland, with low species diversity and a high ruderal component. Pockets of wet grassland and scrub are present in the west, with a marshy/wet woodland area located at the lowest point of the Site in the east (by the R172 Blackrock Road). Mature mixed broadleaf/conifer woodland, hedgerows and treelines associated with the Dundalk Golf Course to the west and private lands the north, south and east, make up the Site's boundaries. Only one invasive plant was recorded; Cherry Laurel (*Prunus laurocerasus*), located along the west and northern boundaries of the Site.

The Site is considered to be of local importance to breeding birds due to the number of species recorded and the presence of 5 red-listed species within or over the Site. The Site provides suitable foraging and nesting habitat for the majority of species recorded; through its various hedgerows and treeline boundaries and rank grassland, as 37 out of 43 species recorded were either confirmed, probable or possible breeders. The Site supported only one target species foraging on the Site during the winter bird surveys; a Common Snipe (*Gallinago gallinago*) and thus is not considered to be an important *ex-situ* site for wintering birds. However, wintering birds are considered as locally important at the Site, due to the potential for disturbance effects on waterbirds using the shore in the vicinity of the Proposed Development.

Mammal trails were recorded along the various boundaries of the Site, however some of these are likely the result of dogs and walkers, as dog prints were observed. No signs of protected species such as Badger (*Meles meles*), Otter (*Lutra lutra*), Irish Hare (*Lepus timidus hibernicus*), Hedgehog (*Erinaceus europaeus*) or pygmy shrew (*Sorex minutus)* were found on Site, although it supports suitable habitat

for Badger and the latter three species in the scrub and grassland present at the Site, and otter foraging habitat in the marsh habitat in the east of the Site. Common Frog (*Rana temporaria*) were recorded breeding in a small pool at the Site. No signs of Common Lizard (*Lacerta vivipara*) were recorded however some marginally suitable habitat does occur in the scrub, grassland and marshy areas of the Site.

The Site is considered to be of local importance to local bat populations, with the Site observed as providing suitable foraging and commuting habitat; through its various connected hedgerows and treeline boundaries and area of wetland habitat in the east of the Site. Bat surveys recorded no bats using the two low roost potential structures on site (a small pumphouse in the west and container in the east) and recorded a total of 5 bat species/species groups; Common pipistrelle (*Pipistrellus pipistrellus*), Soprano pipistrelle (*Pipistrellus pygmaeus*), Leisler's Bat (*Nyctalus leisleri)*, Brown Long-eared bat (*Plecotus auritus*) and unidentified Myotis bats species (*Myotis spp.).* Bat activity was associated with the vegetated boundaries of the Site, with several hot spots recorded. Bats use the western and south-western field boundaries as a commuting foraging route, linking in with the adjoining lands. The southeastern section of the Site provides foraging and commuting habitat in the form of marsh, grassland and scrub, with good connectivity with the mature woodland along the Site's eastern and north-eastern boundaries. Some limited activity was recorded along the central north-south hedgerow but activity along the northern boundary of the Site was minimal.

The following habitats and species were considered as KERs as part of the EcIA of the Proposed Development:

- Marsh (GM1)
- Wet Willow-alder-ash Woodland (WN6)
- Immature Woodland (WS2)
- Mixed Broadleaf/Conifer Woodland (WD2)
- Hedgerows (WL1), Treelines (WL2) and Stone Walls (BL1)
- Small mammals i.e., Irish Hare, Hedgehog and Pygmy Shrew
- Breeding Bird Assemblage
- Wintering Bird Assemblage
- Bat Assemblage
- Common Frog and Viviparous Lizard

4.8.2 Impact Assessment

4.8.2.1 Do Nothing

Should the Proposed Development not go ahead, in the short-term the Site would continue as it is as unmanaged rank grassland. The Site would be expected to become gradually more biodiverse with time, however a lack of grazing or hay harvest would over time lead to succession to scrub and eventually woodland given enough time. The hedgerows and treelines would continue to provide foraging, roosting, and commuting habitat for birds, bats, and small mammals. It is noted, however, that the land in question is zoned for development; to be brought forward within the plan period, and

therefore it is reasonable to assume that a similar residential development could be brought forward on the site and in such case similar effects as described above would be expected.

4.8.2.1 Construction Phase

In the absence of mitigation the potential effects would be at the local scale and range from short-term, adverse, slight (not-significant) effects in terms of dust and noise effects, to short-term, adverse, significant effects in terms of harm/mortality to small mammals, breeding birds and herptiles (frogs and lizards) and/or runoff of sediment or other water borne pollutants into surface waterbodies and designated sites located downstream. Short-term, adverse, moderate (not-significant) effects are possible to wintering bird species. Permanent effects range from permanent, adverse, slight (not-significant) effects in terms loss of minor commuting/foraging habitat for bats, to permanent, adverse, moderate (not-significant) effects through loss of habitat connectivity to birds and small mammals. The proposed landscaping of the Site includes the retention of almost all the existing hedgerows/treelines/woodland bar the loss of small sections to allow for roads and paths.

4.8.2.2 Operational Phase

Operational Phase impacts can be summarised as permanent, neutral, imperceptible effects relating to water pollution downstream of the Site and increased disturbance of waterbirds along the nearby coastline as a result of an increase in local population due to future residents.

4.8.2.3 Cumulative Impact

One project with potential for cumulative impacts involving the Proposed Development was identified; the Dundalk Flood Relief Scheme (FRS). However, limited information is available on the FRS this stage. Although unlikely to be significant given the lack of significant effects envisaged as a result of the Proposed Development, in taking a precautionary approach and given the lack of information available, there could be the potential for cumulative effects on the surrounding environment involving the FRS and the Proposed Development in the absence of mitigation e.g., through wintering bird disturbance along the coast should the construction of coastal flood defences be included in the FRS.

The mitigation measures detailed in this Chapter and the NIS will ensure that the Proposed Development does not contribute to any significant cumulative effects on the environment, including those associated with the Dundalk FRS.

4.8.3 Mitigation

4.8.3.1 Incorporated / Embedded Design

The sustainable urban drainage system (SUDS) features included in the project design will ensure the surface water discharge from the Proposed Development is filtered and reduced to greenfield runoff rates. These features will be implemented as part of the surface water drainage design, mitigating downstream surface water quality impacts associated with the operation of the Proposed Development. The planting of native and non-native tree/shrub species through the Site will provide new habitat and an increase in tree cover across what is currently an open agricultural site, mitigating any loss of vegetated habitats at the Site. The lighting plan for the scheme has been designed so that

lux levels (night-time light spill) along the vegetated boundaries of the Site have been minimised and limited to 0-1.5 lux and levels along the internal retained hedgerows minimised to 0.3 lux for the most part with light-spill of 5 lux occurring in limited instances where proposed pathways intersect the hedgerow. The luminaires selected are also of a warm lighting temperature of 3000k to minimise their impact to bats and other wildlife. These features mitigate by design the potential for operational phase lighting impacts on bats and other wildlife.

4.8.3.2 Construction Phases

The mitigation measures recommended to address the potential impacts of the construction of the Proposed Development include the preparation of, and adherence to, a robust and comprehensive Construction Environmental Management Plan (CEMP) by the contractor for the duration of the Site works. This will bring together and set out all of the environmental control measures (including those detailed in the NIS) required to minimise, and control adverse environmental impacts associated with the Proposed Development. The timing of the various construction works will follow a predetermined construction timeline that will ensure that certain works e.g., the construction of the surface water outfall in the north-east and the main entrance/bus stop in the east, will be conducted between May and September to ensure disturbance to wintering bird species within the bay is avoided.

The above timing of works must also take into account the breeding bird season, and the breeding season for Common Frog, particularly during the works proposed as part of installing the main entrance to the Site in the east. The works within this marshy, scrubby area of the Site will need to be conducted in a manner that minimises impacts to both breeding and wintering birds, as well as Common Frogs. For this Site, given the various ecological constraints, the preferred time for vegetation removal, site clearance and the works within the marshy area at the proposed main entrance, is within the month of September.

Specific Construction Phase mitigation measures will address the potential for invasive species to be introduced to Site, for small mammals to become trapped/injured within the construction site, to minimise noise impacts to local animals, and for retained trees to be damaged during the Construction Phase. The incorporation of hedgehog highways into the designs of the private gardens at the Site, and external Site boundaries will ensure that habitat connectivity for hedgehogs throughout the Site is maintained.

4.8.3.3 Operational Phase

Operational Phase effects are mitigated by way of incorporated or 'embedded' design features as discussed in Section 4.8.3.1. No other mitigation is required during the Operational Phase.

Enhancement measures recommended for the Site include features, such as bat boxes, bird boxes and log piles; to be located at suitable locations around the Site, as well as measures such as the adoption of a low-intervention hedgerow management plan for the Site; which will maintain the outer boundary vegetation and central north-south hedgerow within the Site in as wild a state as possible to maximise the biodiversity value provided by these features at the Site.

4.8.4 Residual Impact Assessment

In terms of residual impacts, the construction mitigation measures detailed in this Chapter, along with the design features to be adopted to minimise adverse impacts to fauna at the Site, will be sufficient to reduce any identified potential effects to KERs associated with the Site to **'Slight (not-significant)'**,

'Not-significant' or **'Imperceptible'**. Furthermore, there is a likelihood of some positive residual impacts for species groups such as birds and pollinators in particular. It is considered that provided the mitigation measures proposed are carried out in full, there will be no significant adverse effects to any valued habitats, designated sites or species.

4.8.5 Monitoring

The monitoring proposed of the Proposed Development includes: Construction Phase monitoring of dust control measures and surface/ground water control measures; pre-construction surveys by an ecologist; a watching brief by the ECoW for the duration of the works for the presence of KER species that might be present at the Site; and Operational Phase monitoring including: a post construction check by an ecologist of the public lighting at the Site once operational to ensure embedded lighting design measures are operating effectively and that light-spill effects on bats and other wildlife are mitigated; the standard maintenance works required to ensure SUDS are working effectively; and the preparation of a Biodiversity Monitoring Plan by an ecologist detailing the continued monitoring (three years) of the recommended enhancement measures e.g., bird and bat boxes, to assess whether they are effective.

4.9 Noise & Vibration

The assessment of Noise & Vibration is contained within Chapter 11 of Volume II.

4.9.1 Existing Environment

The site is located in Haggardstown, a townland situated circa 1.3 kilometres north of Blackrock Village Centre, Co. Louth and circa 3 kilometres to the south of Dundalk Town Centre, Co. Louth.

The site is a greenfield site and is bound to the south by agricultural lands, to the west by Dundalk Golf Club, to the north by private properties and Bóthar Maol and finally to the east by private properties with a portion of the site bounding the Blackrock Road (R172).

Part of the site also extends north along the Blackrock Road (R172) and west along Finnabair Crescent – this is for the provision of service connections.

An environmental noise survey was conducted by RSK Ireland Limited (2023) to quantify the existing noise environment. The survey was conducted in general accordance with ISO 1996: 2017: Acoustics – Description and measurement and assessment of environmental noise. Pre-existing noise levels were found to be typical of a rural location with relatively low baseline noise levels measured across the site. Specific details are set out below. A full copy of the ProPG Inward Noise Impact Assessment can be found in Volume 3 - Appendices.

4.9.2 Impact Assessment

4.9.2.1 Do Nothing Scenario

In the do-nothing scenario, the noise and vibration levels are likely to remain the same as those measured during the baseline environmental survey.

4.9.2.2 Construction Phase

4.9.2.2.1 Construction Phase - Noise

Construction activities are predicted to generate noise levels that may exceed acceptable limits at nearby sensitive receptors. This includes noise from various equipment and activities during the substructure and superstructure stages of construction.

Table 4-1 Summary of Construction Phase Likely Significant Effects in the absence of mitigation.

Quality	Significance	Duration	Type
Negative	**Slight**	**Short-Term**	**Noise**
Neutral	**Imperceptible**	**Short-Term**	**Vibration**

4.9.2.2.2 Construction Phase – Vibration

Vibration impacts are expected mainly during the substructure and superstructure stages of construction when operations such as piling or earthworks are likely to occur.

4.9.2.3 Operational Phase

Building Services Plant

The operational external mechanical plant and equipment associated with the residential units is not available at this stage. In the absence of information regarding the operational plant during planning stage the approach has been taken to determine suitable operational noise emission limits based on the measured background noise levels at the closest sensitive receptors.

Additional Traffic on Public Roads

The Design Manual for Roads and Bridges (DMRB) states that it takes a 25% increase in traffic flows in order to get a 1dBA increase in traffic noise levels. Traffic flow increases associated with the proposed development will be significantly less than 25% and hence traffic noise level increases will be significantly less than 1dBA.

4.9.3 Cumulative Impact

The cumulative impact of the committed developments have been considered; it is not known if the construction periods of the developments will align. However, given the locations of the developments, the predictions and assessments undertaken it is not predicted that the in combination effects will have a negative impact on the noise sensitive receptors for the majority of the developments. However, there are two developments (Ref: 2460037 and 21/1032) that are within 500m of the proposed development which may cause cumulative noise impact during the construction phase depending on if construction phases align mitigation has been provided in the report to ensure this does not provide a negative impact.

4.9.4 Mitigation

4.9.4.1 Incorporated Design

4.9.4.2 Construction Phases

4.9.4.2.1 Construction Phase - Noise

Mitigation measures for construction noise include, using lo noise equipment, controlling noise at the source with temporary screens, erecting site hoarding, temporary noise barriers, public engagement and noise monitoring at the closest noise sensitive receptors.

4.9.4.2.2 Construction Phase - Vibration

Mitigation measures include vibration monitoring at the closest sensitive receptors during the substructure and superstructure stages of the construction phase when piling or earth works are likely to occur.

4.9.4.3 Operational Phase

4.9.4.3.1 Operational Phase – Noise

Based on the worst-case assessment outlined in Chapter 12 of the main EIAR body, the development is compliant with the project criteria. Therefore, no mitigation for operational noise is required.

4.9.4.3.2 Operational Phase – Vibration

As there are no predicted sources of vibration in the operational phase, no mitigation measures are required to attenuate vibrations to the closest sensitive receptors.

Table 4-2 Summary of Operational Phase Likely Significant Effects in the absence of mitigation.

Quality	Significance	Duration	Type
Neutral	**Imperceptible**	**Long-Term**	**Noise**
Neutral	**Imperceptible**	**Long-Term**	**Vibration**

4.9.5 Residual Impact Assessment

4.9.5.1 Construction Phase

As the construction phase is temporary, there will be no long term/permanent noise impacts on the surrounding area from construction noise or vibration.

Table 4-3 Summary of Construction Phase Effects Post Mitigation

Quality	Significance	Duration	Type
Neutral	**Slight**	**Short-Term**	**Noise**
Neutral	**Imperceptible**	**Short-Term**	**Vibration**

4.9.5.2 Operational Phase

Operational noise sources include creche play area, creche car parking, external amenity spaces, and traffic generated on the development. Based on the noise impact assessment it is not likely that there will be any negative noise impact on the surrounding area.

Table 4-4 Summary of Operational Phase Effects Post Mitigation

Quality	Significance	Duration	Type
Neutral	Imperceptible	Long-Term	Noise
Neutral	Imperceptible	Long-Term	Vibration

4.9.6 Monitoring

4.9.6.1 Construction Phase

Based on the predicted noise and vibration levels during the construction stage, noise and vibration monitoring have been recommended to control the noise and vibration emissions of the construction phase and to protect the surrounding sensitive receptors.

4.9.6.2 Operational Phase

Based on the predicted noise levels of the development in operation there is no noise or vibration monitoring required during the operational phase of the development.

4.10 Air Quality

The assessment of Air Quality is contained within Chapter 13 of Volume II.

4.10.1 Existing Environment

The site is located in Haggardstown, Co. Louth and falls into 'Zone C' of Ireland which is described by the EPA as 'Other cities and large towns comprising Limerick, Galway, Waterford, Drogheda, Dundalk, Bray, Navan, Ennis, Tralee, Kilkenny, Carlow, Naas, Sligo, Newbridge, Mullingar, Wexford, Letterkenny, Athlone, Celbridge, Clonmel, Balbriggan, Greystones, Leixlip and Portlaoise'. It is expected that existing ambient air quality in the vicinity of the site is characteristic of a suburban location with the primary source of air emissions such as particulate matter, NO_2, and hydrocarbons likely to be of traffic, aviation, industrial activities, combustion and agriculture, and domestic fuel burning.

The nearest air monitoring station which continuously measures NO_2, PM_{10} and $_{PM2.5}$ is Dundalk monitoring station (ca. 3 kilometres north-west of the site).

Based on EPA background concentrations for 2022 and 2023 at Dundalk monitoring station, the estimated current background NO_2, PM_{10} and $PM_{2.5}$ concentrations in the region of the proposed development is 8.8 µg/m^3, 12.8 µg/m^3 and 14.35 µg/m^3, respectively.

The synoptic meteorological station at Dunsany, Co. Meath is located approximately 54km southwest of the proposed development; and for the purposes of this chapter, weather data collected here may be considered similar to that which is experienced in the area of the site. A review of Dunsany meteorological data indicates that the prevailing wind direction is south-westerly, and wind speeds are generally moderate in nature (see Section 13.6.4.2). Moderate to high windspeeds (above 5m/s (7-10 knots)) are most likely to result in fugitive dust emissions. Approximately 41.52% of all hourly data featured winds of below 5m/s. In addition, dust generation is considered negligible on days where rainfall is greater than 0.2mm. According to a review of daily rainfall data from 2007-2024 it can be determined that 40% of the time dust generation will be reduced. The frequency of winds (>5m/s) occurring in a south-westerly direction on dry days is 8.6%. The prevailing meteorological conditions in the vicinity of the site are favourable in general for the suppression of dust.

4.10.2 Impact Assessment

4.10.2.1 Do Nothing Scenario

If the proposed development were not to proceed, ambient air quality at 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). Under the Do-Nothing Scenario construction works associated with the proposed development will not take place. Impacts from increased traffic volumes and associated emissions from the proposed development will also not occur. It can be determined that the Do-Nothing Scenario would be neutral and not significant in EIA terms

However, given the zoning and planning context, it is reasonable to expect that a similar residential development could be proposed for the site and in such case similar effects as described above would be expected.

4.10.2.2 Construction Phases

A Construction Phase dust assessment has been carried out in accordance with the Institute of Air Quality Management (IAQM) Guidance on the assessment of dust from demolition and construction (2024). The risk of dust impacts has been assessed separately for earthworks, construction and trackout and the dust emission magnitude has been classified for each of the three activities (this is known as 'Step 2A' of the dust assessment), using the definitions outlined for each activity within the Institute of Air Quality Management (IAQM) guidance. The dust emission magnitude is based on the scale of the anticipated works and is classified as small, medium and large. The sensitivity of the area was determined for dust soiling and human health impacts, respectively, as per the guidance (this is known as 'Step 2B' of the dust assessment). In accordance with the Institute of Air Quality Management (IAQM) guidance, the dust emission magnitude (Step 2A) and sensitivity of the area (Step 2B) have been combined and the risk of impacts from demolition, construction, earthworks and trackout have determined (before mitigation is applied) (this is known as 'Step 2C' of the dust assessment). This risk has then been used to inform the selection of appropriate mitigation measures.

Table 4-5 details the risk of dust impacts for earthworks, construction and trackout activities without mitigation measures.

Table 4-5 Summary of Unmitigated Risks

Potential Impact	Sensitivity	Magnitude		
		Earthworks	Construction	Trackout
		Large	Large	,Medium
Dust Soiling Impacts	High	High Risk	High Risk	Medium Risk
Human Health Impacts	Low	Low Risk	Low Risk	Low Risk
Ecological Impacts	High	High Risk	High Risk	Medium Risk

The dust risk categories detailed in Table 4-5 been used to define the appropriate, site-specific, mitigation measures to be adopted.

Assessment of Specified Infrastructure Projects – PE-ENV-01106 (TII, 2022), states that road links meeting one or more of the following criteria can be defined as being 'affected' by a proposed development and should be included in the local air quality assessment. While the guidance is specific to infrastructure projects the approach can be applied to any development that causes a change in traffic.

- Annual average daily traffic (AADT) changes by 1,000 or more;
- Heavy duty vehicle (HDV) AADT changes by 200 or more;
- Daily average speed change by 10 kph or more;
- Peak hour speed change by 20 kph or more; or
- A change in road alignment by 5m or greater.

The construction stage traffic will not change by more 1,000 AADT or 200 HDV AADT and does not meet the above scoping criteria. As a result, a detailed air assessment of construction stage traffic emissions has been scoped out from any further assessment as there is no potential for significant impacts to air quality.

It can be determined that the construction stage traffic will have a ***direct, short-term, negative*** and ***imperceptible,*** i.e., not significant, effect on air quality and human health, which is overall not significant in EIA terms.

4.10.2.3 Operational Phase

Operational Phase traffic associated with the proposed development has the potential to affect local air quality due to increased vehicle movements. The TII scoping criteria were used to identify affected road links, resulting in a detailed air quality modelling assessment for four road links where traffic is expected to increase by more than 1,000 AADT.

The impact on air quality due to changes in traffic was assessed at sensitive receptors near these roads. Modelling was conducted for NO_2, PM_{10}, and $PM_{2.5}$ concentrations for the Base, Opening, and Design Years under both Do Minimum (Do Nothing) and Do Something scenarios using the TII Road Emissions Model (REM) online calculator tool.

Inputs for the REM tool included receptor locations, annual average daily traffic movements for light and heavy-duty vehicles, traffic speeds, road link lengths, road type, project county location, and pollutant background concentrations. The Default fleet mix and Intermediate Case fleet data were selected, assuming a balance between current vehicle ownership trends and the adoption of low emission vehicles.

The model predicted road traffic contributions to ambient ground level concentrations at sensitive receptors using generic meteorological data. It incorporated county-based Irish fleet composition, European emission standards, and emission factors for PM_{10} from brake and tire wear. Predicted road contributions were added to existing background concentrations to determine ambient concentrations, which were then compared with relevant air quality standards to assess compliance.

Overall, the TII significance criteria have identified neutral impacts due to increases in NO_2, PM_{10} and $PM_{2.5}$ annual mean concentrations which are less than 5% of the annual mean ambient air quality standards (and the annual mean concentrations are less than 75% of the air quality standard). This equates to a potential effect of the proposed development on ambient air quality, and human health, in the operational stage according to the EPA guidelines (EPA, 2022) which is considered ***direct, long-term, negative*** and ***not significant***.

In addition to assessing the impact to people as a result of air quality, the impact to sensitive ecosystems must also be assessed as per the TII guidelines (TII, 2022; 2024). The EC Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the *'Habitats Directive'*) requires an Appropriate Assessment to be carried out where there is likely to be a significant impact upon a European protected site. TII requires the Air Quality Specialist to liaise with an ecologist on schemes where there is a European protected site within 2km of the proposed development site. Sections of the Dundalk Bay SAC (Site Code: 000455) and Dundalk Bay SPA (Site

Code: 004026) are within 200m of the link roads impacted by the proposed development. Therefore, an assessment of air quality impacts to ecology was carried out within sections of these sites closest to the impacted roads.

The TII REM was used to calculate the NO_X and NH_3 concentrations and N deposition and acid deposition rates within the sections of the identified ecological sites that are within closest proximity to the road alignments. Pollutant concentrations will be greatest closest to the road, with concentrations decreasing with increased distance from the road. Therefore, by assessing the impact at the point within the designated site that is closest to the road, the worst-case impact can be determined. The inputs into the REM are the same as those outlined for the local air quality assessment. Modelling of the Opening Year 2028 and the Design Year 2043 was conducted for both the Do Nothing and Do Something scenarios in order to determine the degree of change in air quality.

In accordance with the EPA Guidelines (EPA, 2022) the ecological impacts associated with the operational phase traffic emissions are overall ***direct, long-term, negative*** and ***slight*** during the Operational Phase, which is overall ***not significant***.

4.10.2.4 Cumulative Impact

In terms of dust, no significant impacts are predicted; good construction practice, which incorporates the implementation of the identified mitigation measures, will be employed at the site.

Assessment of road traffic emission impacts on air quality involved traffic data which is inclusive of traffic associated with other existing and permitted developments on the road networks surrounding the site. Therefore, cumulative impacts have been assessed in this regard and the impact on ambient air quality has been determined as not being significant.

It is considered that the cumulative impact will be 'short-term', 'imperceptible' and 'negative', i.e., not significant.

4.10.3 Mitigation

4.10.3.1 Construction Phases

Communications

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site;
- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager/community liaison officer;
- Display the head or regional office contact information; and
- Develop and implement a Dust Management Plan (DMP), the final dust management plan will form part of the overall construction and environmental management plan which will formally be prepared by the appointed contractor(s) and submitted to Louth County Council post grant of planning permission.

Site Management

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;
- Make the complaints log available to the local authority when asked;
- Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book; and
- Hold regular liaison meetings with other high risk construction sites within 250m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.

Monitoring

- Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the Louth Council when asked; and
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

Preparing and Maintaining the site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site;
- Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period;
- Avoid site runoff of water or mud;
- Keep site fencing, barriers and scaffolding clean using wet methods;
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below; and
- Cover, seed or fence stockpiles to prevent wind whipping.

Operating Vehicle/Machinery and Sustainable Travel

- Ensure all vehicles switch off engines when stationary - no idling vehicles;
- Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable; and
- A speed restriction of 20 km/hr will be applied as an effective control measure for dust for on-site vehicles using unpaved haul roads.

Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;

- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate;
- Use enclosed chutes and conveyors and covered skips; Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; and Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

Waste Management

- Avoid bonfires and burning of waste materials.

Measures Specific to Earthworks

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable; and
- Only remove the cover in small areas during work and not all at once.

Measures Specific to Construction

- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

Measures Specific to Trackout

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use;
- Avoid dry sweeping of large areas;
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport;
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;
- Record all inspections of haul routes and any subsequent action in a site log book;
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned;
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable);
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits; and
- Access gates to be located at least 10 m from receptors, where possible.

4.10.3.2 Operational Phase

It has been determined that the Operational Phase air quality impact is negligible and therefore no site-specific mitigation measures are proposed.

4.10.4 Residual Impact Assessment

The IAQM recommends that significance is only assigned to effect after considering the construction activity mitigation. The risk of dust impacts has been determined in Step 2C and the appropriate dust mitigation measures identified in Step 3 (Section 13.8.1 of this chapter) and the final step is to determine whether there are significant effects arising from the Construction Phase of the proposed development. The proposed mitigation measures will ensure that a potential significant adverse effect will not occur, therefore, the residual effect will be direct, short-term, negative and imperceptible for the Construction Phase, i.e., not significant.

The traffic generated by the proposed development has been assessed for its impact on air quality and it has been determined that the residual impact for the Operational Phase will be direct, long-term, negative and not significant.

4.10.5 Monitoring

The monitoring of construction dust during the Construction Phase of the proposed development is recommended to ensure that impacts are not experienced beyond the site boundary. Monitoring of dust can be carried out by using the Bergerhoff Method. This involves placing Bergerhoff Dust Deposit Gauges at a strategic locations along the site boundaries for a period of 30 +/- 2 days. The selection of sampling point locations should be carried out in consideration of the requirements of VDI 2119 with respect to the location of the samplers relative to buildings and other obstructions, height above ground, and sample collection and analysis procedures. After the exposure period is complete, the Gauges should be removed from the site; the dust deposits in each Gauge will then be determined gravimetrically and expressed as a dust deposition rate in mg/m2/day in accordance with the relevant standard.

Due to the negligible impact on air quality from the Operational Phase of the proposed development, no specific monitoring is recommended.

4.11 Climate

The assessment of Climate is contained within Chapter 14 of Volume II. The impact assessment included the following:

- 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.

4.11.1 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 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 to stay within the budget requirements.

4.11.2 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 as a result of the development due to the embodied carbon associated with the building materials for the proposed development.

4.11.2.1 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.

4.11.2.2 Greenhouse Gas Assessment

4.11.2.2.1 Construction Phase

Calculation of the GHG emissions associated with the construction of the proposed development was calculated using information on the lifecycle assessment completed by the project developer on their typical house builds and the online Transport Infrastructure Ireland Carbon Assessment 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 $MtCO_2e$. The proposed development will incorporate a number of mitigation measures as well as sustainable policy measures from the project developer, the proposed development is aligned with Ireland's GHG trajectory to net zero by 2050.

4.11.2.2.2 Operational Phase

GHG emissions during the operational phase due to road traffic were assessed. Modelling of operational CO_2e emissions from traffic associated with the proposed development on the surrounding road network was undertaken 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"*. It was concluded that traffic related CO_2e emissions will not have a significant impact on climate due to the low level changes in emissions.

4.11.2.2.3 GHG Assessment Significance of Effects

The TII PE-ENV-01104 guidance states that the following two factors should be considered when determining significance:

- The extent to which the trajectory of GHG emissions from the project aligns with Ireland's GHG trajectory to net zero by 2050; and
- The level of mitigation taking place.

The level of mitigation proposed for the development has been taken into account when determining the significance of the proposed development's GHG emissions. Based on the carbon emissions intensity and policy measures the project developer has in place, it can be concluded that the proposed development is aligned with Ireland's GHG trajectory to net zero by 2050. Therefore, according to the TII significance criteria, the significance of the GHG emissions during the construction and operational phase is minor adverse. The proposed development has mitigated some GHG impacts where possible. In accordance with the EPA guidelines the above significance equates to a significance of effect of GHG emissions during the construction and operational phase which is ***direct, long-term, negative*** and ***slight***, which is overall ***not significant***.

4.11.2.3 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 considered overall ***not significant*** with regard to the construction and operational phase.

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

4.11.2.4 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.

4.11.3 Mitigation

4.11.3.1 Incorporated Design

A number of mitigation measures have been incorporated into the design of the proposed development. The development will be in compliance 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). Additionally, landscape planting elements have been chosen with consideration for climate change impacts in future years.

4.11.3.2 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. The project developer, Marina Quarter Ltd. (Glenveagh Properties), has committed to achieving Net Zero by 2050 across its whole business. Therefore, the proposed development will be built with carbon reduction and sustainability in mind and will include reductions of embodied emissions during the construction phase.

4.11.3.3 Operational Phase

During the operational phase the primary focus will be on operational energy usage and outlined through the incorporated design mitigation. Sustainable travel modes will be encouraged through support facilities for cycling, and infrastructure for electrical vehicle charging points.

4.11.4 Residual Impact Assessment

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 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 as a result 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.

4.11.5 Monitoring

There is no monitoring proposed during the construction or operational phase in relation to climate.

4.12 Cultural Heritage

The assessment of Cultural Heritage – Archaeology & Built Heritage is contained within Chapter 15 of Volume II.

4.12.1 Existing Environment

The proposed development area is located within the townlands of Haggardstown and Marshes Upper, to the south of Dundalk town and within a landscape that is characterised by suburban and industrial development. There is one recorded monument partially within the redline boundary for the proposed development area, where it extends along the existing Hardys Lane. This consists of a souterrain (LH007-080), which was subject to archaeological excavation in 1980 and is no longer preserved as a site below the current ground level although it remains on the historic record. There are an additional ten recorded archaeological sites within the 500m study area of the proposed development area. The majority of these sites have been subject to preservation by record (archaeological excavation) as part of ongoing development within the landscape over the past 50 years.

There are seven structures included on the RPS and NIAH within 500m of the proposed development area. The closest comprise The Square, Northsides 1-5 (RPS 012-004a-e, NIAH 13824001-003), which are located c. 416m south of the proposed development area. No Architectural Conservation Areas or NIAH Garden Survey landscapes are located within the study area.

A review of the Excavations Bulletin (1970-2025) has revealed that in 2018 previous investigations were carried out across the proposed development area. Geophysical survey, followed by targeted archaeological testing was undertaken across the site. No archaeological features were recorded during the course of these investigations. In December 2025 archaeological monitoring was carried out within the development area during topsoil stripping associated with establishment of a haul road and limited house foundations. Nothing of archaeological significance was identified during the course of works.

Based on these results it is reasonable to assume no large-scale archaeological complexes survive within the proposed development area.

Within the surrounding environs, an archaeological complex containing five souterrains and two enclosure ditches (LH007-080-086, LH007-139-040) were excavated to the northwest during the 1980s. At Finnabair Business Park archaeological testing revealed Bronze Age features including post-built structures. Excavations in the 1980s further northwest at the Accuray factory revealed an early medieval settlement site associated with the souterrain LH007-080, which was also excavated at this time.

Analysis of cartographic sources has revealed that the proposed development area itself has remained relatively unchanged from the post-medieval to modern periods. Historically the site was located within undeveloped lands to the south of Dundalk and adjacent to the coast. The cartographic coverage does illustrate the development of Mountain View House, which is located c. 50m east of the proposed development area, within its own mature gardens. The house dates to the turn of the

20th century and whilst it has been extended to the north, it retains local cultural heritage value but is not a protected structure nor listed in the NIAH.

Analysis of aerial photographic record available for the area failed to identify any previously recorded archaeological features within the proposed development area, although a potential enclosure site was noted c. 75m to the southeast.

A field inspection has been carried out as part of this assessment. No previously unrecorded features of archaeological potential were noted during the course of the inspection. Mountain View House was confirmed as present in the landscape, with its principal elevation facing east over Dundalk Bay. The gardens associated with the house provide screening in the form of large, mature trees along the eastern boundary of the proposed development area.

The proposed access road from Blackrock Road will require the removal of a short section of stone boundary wall and will cross a narrow stretch of waterlogged ground adjacent to the coastal resource, which possesses a general archaeological potential.

4.12.2 Impact Assessment

4.12.2.1 Do Nothing Scenario

If the proposed development were not to proceed, there would be no negative effect on the archaeological, architectural or cultural heritage resource.

Given the zoning and planning context, it is reasonable to expect that a similar residential development could be proposed for the site and in such case similar effects as described above would be expected.

4.12.2.2 Construction Phase

Geophysical survey, archaeological testing within the proposed development area in 2018 and a limited programme of archaeological monitoring (December 2024) has confirmed that there are no large-scale archaeological complexes located within the proposed development area. It remains possible that small-scale or isolated archaeological features may survive within the site, outside of the footprint of the excavated test trenches. Groundworks associated with the development may have a direct, permanent, negative effect on these remains. Effects may range from moderate to very significant, depending on the nature, extent, and significance of the archaeological remains that may be present. Effects have the potential to be significant in EIAR terms.

The route of the proposed access road will pass through a waterlogged area that possesses archaeological potential and will cross a further greenfield. These areas may contain buried archaeological remains. Groundworks associated with the construction of the road may have a direct, permanent, negative effect on any such remains that may be present. Effects may range from moderate to very significant, depending on the nature, extent, and significance of any archaeological remains that may be present. Effects have the potential to be significant in EIAR terms.

A small section of stone boundary wall that bounds Blackrock Road will be removed during the construction phase. This is a direct, negative and permanent effect but is considered slight in terms of

significance of effect, as the majority of the feature will be preserved. The wall is not subject to statutory protection. The wall is not subject to statutory protection and the effect is not considered to be significant in EIAR terms.

4.12.2.1 Operational Phase

There are no predicted impacts upon the archaeological, architectural or cultural heritage resource during the operational phase. Mountain View House will be screened from the proposed development by its own mature gardens, and as such no negative effects are predicted on the setting of the structure.

4.12.2.2 Cumulative Effect

All proposed developments within the 500m study area have been reviewed in order to identify any cumulative effects that may present, when considered with the development under assessment in this chapter. As any archaeological remains within the proposed development area will either be preserved in-situ or by record, no cumulative effects have been identified at construction phase. The operational phase will not result in effects on the archaeological, architectural or cultural heritage resource and as such no cumulative effects have been identified.

4.12.3 Mitigation

4.12.3.1 Demolition & Construction Phases

A programme of archaeological testing, which will assess the remaining portions of the proposed development area and the route of the access road, will be carried out prior to the commencement of construction. The works will be undertaken by an archaeologist under licence to the National Monuments Service of the DoHLGH. Dependant on the results of the assessment, further mitigation may be required, such as preservation by record or in situ and/or archaeological monitoring. Any further mitigation will require approval from the DoHLGH.

The section of boundary wall that bounds Blackrock Road will be subject to a photographic record prior to removal and the removal of the feature will be subject to archaeological monitoring.

4.12.3.2 Operational Phase

None required.

4.12.4 Residual Impact Assessment

Following the completion of the mitigation measures, there will be no significant negative residual effects on the archaeological resource. If archaeological remains are identified within the development area and subject to archaeological excavation (preservation by record), there will be a slight negative residual effect on the archaeological resource.

4.12.5 Monitoring

The mitigation measures detailed above would also function as a monitoring system to allow the further assessment of the scale of the predicted effects and the effectiveness of the mitigation measures.

4.13 Description of Significant Interactions

Likely significant interactions are set out in Chapter 16 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.

This section summarises the proposed mitigation and monitoring measures set out in Chapters 4 to 15, and collated in Chapter 17, of Volume II of this 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.

Table 5-1 Incorporated Design Mitigation Measures

Aspect	Incorporated Design Mitigation
Population & Human Health	▪ The proposed development complies with the Building Regulations 1997 to 2024 (the Building Regulations), which provide for the safety and welfare of people in and around buildings. The Building Regulations cover matters such as structure, fire safety, sound, ventilation, conservation of fuel and energy, and access, all of which safeguard users of the buildings and the health of occupants. ▪ The proposed development complies with the requirements of Part M of the Building Regulations and incorporates the principles of universal design so that the development will be readily accessible to all, regardless of age, ability, or disability. ▪ The proposed design will segregate pedestrians and bicycle traffic from motorised traffic. The integration of energy efficient measures into the design will provide for healthier living standards for future occupants, less dependence on fossil fuels and associated improved air quality ▪ The availability of on-the-doorstep public open spaces and amenity areas will provide a high quality environment for the residents and will encourage sustainable modes of outdoor access for a wide age group.
Landscape & Visual	▪ Green Infrastructure and Connectivity including circulation paths providing a safe environment for walkers, runners and cyclists linking the core and linear open spaces; ▪ Maintain a significant swathe of open space within the central part of the development in the H1 Open Space Zoned Lands; ▪ Open space management plans contains areas that can be managed to encourage habitats creation; ▪ Natural surveillance of all open spaces with houses fronting these areas; ▪ Provision of playgrounds to cater for the recreational and educational requirements of children of residents. ▪ Due regard has been given with the landscape design coordinating with engineers in terms of Sustainable Urban Drainage Systems (SuDS) as required in terms of swales, compensation areas and retained watercourses or culverts; ▪ Biodiversity and habitat creation or enhancement including planting of over 600 no. 'semi-mature' or 'extra-heavy standard' size trees to give instant impact and provide enclosure

Aspect	Incorporated Design Mitigation
	and screening. Further landscape works include woodland planting (1,285m²), new hedgerows (596 linear meters), and shrub planting (6,855m²); ▪ Plants selected are predominantly indigenous and species based on those in the "All-Ireland Pollinator Code 2021-2025" to ensure successful plant establishment that will merge visually and ecologically into this area.
Material Assets: Traffic & Transport	▪ An internal site layout that has been designed in accordance with DMURS, which prioritises pedestrian and cycle movement over vehicular movements, creating a safer environment for those on foot or bike. ▪ The entire site, and external access junction proposals, has been the subject of a Stage 1 / 2 Road Safety Audit, which has assessed safety aspects for all modes of transport. The following changes were made to the design in response to the Audit: - Additional signage and surfacing details were added to the drawings to clarify a pedestrian refuge zone at the R617 / Site Access junction. - Tactile paving was added to the junction between the site access path and Bothar Maol. - A corner radius was adjusted on an internal street, to allow two cars to pass more easily.
Material Assets: Built Services	▪ Surface Water runoff from the proposed development will be managed in accordance with the requirements of the Greater Dublin Strategic Drainage Study (GDSDS), the Construction Industry Research and Information Association's Sustainable Drainage Systems Manual (CIRIA SuDS) and Louth County Council Water Services Department (LCC WSD), with Surface Water attenuation and retention included as part of the main Surface Water drainage system. The Surface Water management proposals shall serve to reduce the overall impact of the proposed development on the existing environment. The proposed scheme shall incorporate SuDS treatment process which intercepts Surface Water run-off and treats the water by two stages of filtration and treatment through natural material and conveying this water to storage facilities. ▪ The proposed Wastewater drainage system was designed in accordance with the Uisce Éireann Code of Practice for Wastewater Infrastructure IW-CDS-5030-02, IS EN 12056:2000 Gravity Drainage Systems inside Buildings, I.S. EN752: 2017 Drain & Sewer Systems outside Buildings and the Building Regulations Technical Guidance Document Part H. The proposed drainage system will therefore be designed with appropriate capacity for the development to ensure self-cleansing velocities are achieved to reduce the risk of blockages and odours. ▪ The proposed watermain infrastructure is designed in accordance with Uisce Éireann's 'Code of Practice for Water Infrastructure IW-CDS-5020-03 and provides appropriate capacity for the development to minimise the risk associated with low service pressure. ▪ All proposed power cables within the development will be buried underground or internal within buildings and will be installed according to the relevant ESB Networks specifications. ▪ There is no gas infrastructure on the subject site and it is not proposed to provide gas as a utility within the proposed development. ▪ The proposed telecommunications infrastructure within the development will be buried underground or internal within buildings.
Material Assets: Waste	▪ Buildings have been designed with material efficiency in mind. This will reduce the amount of materials used in the building fabric and minimising the waste during construction; ▪ Measures to achieve on-site and off-site reuse and recycling of waste have been identified; and

Aspect	Incorporated Design Mitigation
	▪ Dedicated, secure waste segregation areas have been selected for the duration of the enabling works. The dedicated waste storage areas within the waste segregation points will house all bins and skips for the storage of segregated construction waste generated. All containers will be marked with clear signage which will identify which waste types are to be placed into each container
Land & Soils	▪ The design and specification for all buildings will be in accordance with current Building Regulations, including radon protection measures appropriate to a 'High' Radon Area.
Water & Hydrology	▪ It is considered that the design of the Proposed Development is in line with the objectives of the Water Framework Directive (2000/60/EC as amended) (WFD) to prevent or limit any potential impact on water quality of the receiving environment. ▪ With regard to the proposed discharge of treated operational surface water from the Proposed Development to the two (2No.) unnamed streams, SuDS measures and petrol interceptor are incorporated in the fundamental scheme design. ▪ Foul water and water supply infrastructure will comply with UE Code of Practice for Wastewater Infrastructure (IW-CDS-5030-03), UE's Code of Practice for Water Infrastructure (IW-CDS-5020-03), IS EN 752 Drain and Sewer Systems outside Buildings, IS EN 12056 Gravity Drainage Systems inside Buildings and the Building Regulations Technical Guidance Document Part H Drainage and Wastewater.
Biodiversity	The Proposed Development includes several embedded design features that may act to avoid or mitigate negative effects that would likely occur in the absence of these features. However, as opposed to typical mitigation measures, the implementation of these features is integral to the design and completion of the Proposed Development, and as such the impact assessments are performed with consideration of these features as integrated parts of the Proposed Development. All considered embedded design features that may act to mitigate negative impacts on local ecology and environment are listed below. SuDS: ▪ Bioretention areas ▪ Tree pits & unlined tree pit trenches ▪ Unlined permeable paving ▪ Filter drains ▪ Detention basins ▪ Attenuation tanks ▪ Petrol/oil separators ▪ Flow Control Devices ▪ Rainwater harvesting at the creche Landscape Design: ▪ Retention of majority of existing hedgerows ▪ Additional native shrub and tree planting throughout. Lighting Design: ▪ Bat sensitive lighting approach designed in coordination with an Ecologist.
Noise & Vibration	<u>Noise</u> ▪ Based on the layout of the dwellings, the central amenity space where the majority of large gatherings are likely to take place, is screened to a high degree at the NSL's due to the proposed dwellings surrounding the space. ▪ Additionally, the distances between amenity spaces and the sensitive receptors also provides attenuation due to the distance attenuation rule. <u>Vibration</u> None

Aspect	Incorporated Design Mitigation
Air Quality	None
Climate	A number of measures have been incorporated into the design of the development to reduce the impact on climate wherever possible. These measures are outlined in further detail in the application drawings, *Architects Design Statement* (prepared by JFA Architects) and *Utilities & Energy Sustainability Report* prepared by PEMP Consulting and submitted as part of the planning application for the proposed development. The development will be in compliance 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. Such measures included in the proposed development to reduce the impact to climate from energy usage are: ▪ The residential units will aim to achieve a Building Energy Ratio (BER) of A2 (25-49 kwh/m^2/yr); ▪ Achieve air tightness standards of 3 m^3/m^2/hr; ▪ Ensure thermal bridging details are designed to achieve thermal bridging factors of 0.08W/m^2K for the residential units and 0.15 W/m^2k for the apartment units; ▪ Energy Performance Coefficient (EPC) < 0.30; ▪ Carbon Performance Coefficient (CPC) < 0.35; ▪ Renewable Energy Ratio (RER) > 0.20; ▪ Meet or exceed minimum U-Value standards identified in Part L 2022 Dwellings; ▪ Use of natural ventilation will be maximised to reduce the requirement for mechanical alternatives; ▪ Air Source Heat Pumps are being considered as a viable option to provide space heating and domestic hot water within the dwellings; ▪ Exhaust Air Heat Pumps are being considered where mechanical ventilation is required; ▪ Solar photovoltaic panels are being considered to fulfil the renewable energy requirement. These have the benefit of providing an alternative renewable energy source for the housing units; ▪ Use of natural daylight will be maximised to reduce the need for artificial lighting; ▪ Where artificial lighting is required, this will be in the form of energy efficient LED lighting; and ▪ Bicycle parking and infrastructure to support electric vehicle (EV) car charging has been incorporated into the development to provide an alternative, more sustainable modes of transport. ▪ adequate attenuation and drainage have been incorporated into the design of the development to avoid potential flooding impacts as a result of increased rainfall events in future years. ▪ Landscape planting elements have been chosen with consideration for climate change impacts in future years. The landscape planting specifications are a majority mix that comply with the All Ireland Pollinator Plan/Native Species Guidance and will withstand Ireland's extreme climatic conditions. In periods of high temperatures certain species can withstand drought however, a Management Maintenance Plan that details the regular watering requirements during such conditions is also provided as part of the landscape specifications for the proposed development.
Cultural Heritage	None

Table 5-2 Construction and Demolition Mitigation

Aspect	Construction and Demolition Mitigation
Population & Human Health	▪ An *Outline Construction and Environmental Management Plan (CEMP)* for the proposed development is included in the application documentation. The Outline CEMP will be updated by the contractor(s), submitted to the Council prior to commencement, and implemented by the selected contractor (s) after any consent is received.. ▪ All construction personnel will be required to understand and implement the requirements of the CEMP and shall be required to comply with all legal requirements and best practice guidance for construction sites. ▪ The CEMP provides for a construction phase management structure to ensure that environmental protection and mitigation measures are put in place. The CEMP requires that these measures will be checked, maintained to ensure adequate environmental protection. The CEMP also requires that records will be kept and reviewed as required to by the project team and that the records will be available on site for review by the planning authority. ▪ All construction personnel will attend induction and training classes as required to ensure that the CEMP is effectively implemented. The CEMP will comply with all appropriate legal and best practice guidance for construction sites. ▪ Project supervisors for the construction phase will be appointed in accordance with the Health, Safety and Welfare at Work (Construction Regulations) 2013 (as amended), and a Preliminary Health and Safety Plan will be formulated during the detailed design stage which will address health and safety issues from the design stages, through to the completion of the construction phases.
Landscape & Visual	▪ A key consideration in landscape terms during the construction period is ensuring the provision of a suitable top surface growing medium (i.e. soil) to ensure successful establishment on soft landscape treatments. ▪ Materials or rock excavated from the existing site will be crushed for re-use where possible thus negating the requirement for import of additional fill. ▪ All topsoil will be retained for use on site with much of it being reused in the retained open spaces. ▪ Retention of boundary vegetation and erection of screen hoarding; ▪ The internal and boundary hedgerows will be managed to remove dead, dying and dangerous branches and any colonising scrub or brier. The works will also entail removal of trees on site suffering from Ash die-back disease. For retained trees, the recommendations given in BS5837:2012 Guide for trees in relation to construction will be adopted to ensure site and tree safety. ▪ Minimise hedgerow and tree removal and time any canopy reduction or cutting to winter months; ▪ Construction of the new footpath and crossing on Bóthar Maol will entail Tree Surgeon being engaged with reference to potential impacts on Tree No. 59 Sycamore and requirement in the tree root protection zone for a no-dig solution for the proposed footpath construction; and ▪ Control of disturbance including dust, mud, noise, lighting.
Material Assets: Traffic & Transport	▪ Traffic impacts during the construction stage will be mitigated through the implementation of a Construction Traffic Management Plan (CTMP), which will be agreed with LCC. A Framework CTMP, which sets out the principles to be followed, forms part of the wider Outline Construction and Environmental Management Plan submitted with this application. The CTMP sets out the principles by which construction traffic will be planned for, managed, and monitored, to ensure that any impacts on local communities, vulnerable users and road users, will be minimised as far as possible.

Aspect	Construction and Demolition Mitigation
Material Assets: Built Services	▪ The Contractor shall prepare and implement a Demolition and Construction Phase Surface Water Management Plan that ensures avoidance and minimisation of effects. Surface Water storage in excavations shall be directed to on-site settlement ponds, where silt removal will be facilitated prior to discharge off site at a controlled and agreed rate in accordance with the greenfield runoff rates for the site. In order to reduce and minimise the risk on impacting the existing water environment from material spillages, all oils, solvents and paints used during construction will be stored within temporary bunded areas or chemical storage containers. ▪ The demolition and construction phase discharge of Wastewater to the existing 600mm wastewater sewer to the north-west of the subject site shall comply with the conditions of a Discharge Licence from Uisce Éireann. During construction, all new sewers shall be pressure tested, and CCTV surveyed in accordance with the Uisce Éireann Standards to identify potential defects and such defects, should they arise, shall be repaired prior to the connection. ▪ During demolition and construction, the watermains shall be tested in accordance with the requirements of Uisce Éireann (such as pressure testing, water main disinfection, water quality analysis, etc) prior to connection. ▪ The ESB shall install all of the new incoming supplies to the proposed development. The ESB shall also liaise with residents and keep existing customers fully informed of any brief outages which may be required due to the diversion and undergrounding of the existing overhead 38kV lines or connections to the proposed development. The Contractor shall ensure that construction works on site adhere to the ESB Networks / HSA "Code of Practice for Avoiding Danger from Overhead Electricity Lines". ▪ The relevant utility provider shall install the new incoming supplies to the proposed development and shall liaise with existing customers to advise of possible outages in order to facilitate the connections. The works shall be carried out such that they minimise disruption to surrounding areas.
Material Assets: Waste	<u>Waste Management</u> ▪ Waste materials will be separated at source and will follow the Construction Waste Management Plan (CWMP) contained within the Outline CEMP (DOBA, 2025) and Contractor(s) Construction Environmental Management Plan (CEMP); ▪ Prior to the commencement of the Construction Phase detailed calculations of the quantities of topsoil, subsoil and green waste will be prepared, and soils will be tested to confirm they are clean, inert or non-hazardous; ▪ A policy of 'as needed' ordering and strict purchasing procedures will be implemented to prevent waste arisings as far as possible; ▪ The Contractor will vet the source of aggregate, fill material and topsoil imported to the site in order to ensure that it is of a reputable origin and that it is "clean" (i.e., it will not contaminate the environment). ▪ The Contractor and/or Council will implement procurement procedures to ensure that aggregate, fill material and topsoil are acquired from reputable sources with suitable environmental management systems as well as regulatory and legal compliance; ▪ The waste materials generated during the Construction Phase will be stored in suitably size receptables and transferred offsite for appropriate processing, recycling and recovery; ▪ Waste materials generated from the Construction Phase that are unsuitable for reuse or recovery will be separately collected; ▪ Disposal of construction generated wastes will be a last resort and only after recycling or recovery options have been ruled out;

Aspect	Construction and Demolition Mitigation
	▪ A suitably competent and fully permitted waste management company will be employed to manage waste arising for the Construction Phase. The appointed waste contractor must have the relevant authorisations for the collection and transport of waste materials, issued by the National Waste Collection Permit Office (NWCPO); ▪ All waste materials will be transported to an appropriately authorised facility, which must have the relevant authorisations for the acceptance and treatment of the specific waste streams, i.e., a Certificate of Registration (COR) or a Waste Facility Permit (WFP) as granted by a Local Authority, or a Waste/Industrial Emission Licence as granted by the Environmental Protection Agency; ▪ It is not envisaged that there will be any hazardous waste generated throughout the construction works however, in the event that hazardous soil, or historically deposited waste is encountered during the site bulk excavation phase, the contractor will notify Louth County Council and provide a Hazardous / Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant mitigation, destination for disposal/treatment, in addition to information on the authorised waste collector(s). Only authorised facilities will be used and as a result of this. The potential impacts at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures; ▪ Waste generated by construction workers will be stored in wheelie bins on site and it will be collected by an appropriately authorised waste collector. All wastes generated on site will be sent for recycling, recovery, or disposal to a suitably licensed or permitted waste facility; and ▪ All waste quantities and types will be recorded and quantified, and records will be retained onsite for the duration of the Construction Phase. ▪ The Contractor shall, prior to the commencement of the works, nominate and appointan adequately trained Construction Waste Manager (CWM) with overall responsibility for implementation of the CWMP contained within the Outline CEMP. The Contractor's CWM shall be responsible for the following: - • Instructing all site personnel to comply with the specific provisions of the CWMP, in particular the Objectives regarding the prevention, reduction, re-use and recycling. • Ensuring that copies of the CWMP will be made available to all relevant personnel on site. • Informing through regular training of all site personnel of the objectives of the plan and their responsibilities in relation to compliance with the plan. • Ensuring that where training is required regarding the handling and management of Wastes on site that this is provided to staff as required to ensure they can: - ○ Distinguish reusable materials from materials suitable for recycling ○ Ensure maximum segregation at source ○ Co-operate with the Contractor's management regarding stockpiling of reusable material and ensure separation of materials for recovery ○ Identify and liaise with operates of recovery outlets • Informing Contractor staff and Sub-Contractors of content of the plan and for maintaining and keeping detailed records • An appropriate staff member from each Sub-Contractor on the site shall be assigned the direct responsibility to ensure that the discrete operations stated in the CWMP are performed on an on-going basis. In the event of the CWM leaving the project team, the Contractor will nominate a suitable replacement

Aspect	Construction and Demolition Mitigation
	Invasive Species ▪ The contractor will prepare a project specific Invasive Alien Plant Species (IAPS) standard operating procedure document, in advance of work commencement. The document will be prepared by an IAPS specialist and will cover the bio-security measures to be taken, including the maintenance of records, to screen for the introduction of IAPS on-site, and to enable their tracing if such an introduction occurs; and to ensure no transmission of IAPS offsite. The measures include: • Validation that all machinery / vehicles are free of IAPS, prior to their first introduction to site; • Certification from the suppliers that all imported soils and other fill/landscaping materials are free of IAPS; • A regular schedule of site inspections across the IAPS growing seasons, for the duration of the construction works programme; • Validation that all machinery / vehicles are free of IAPS, prior to leaving the site; and ▪ Appropriate and effective site biosecurity hygiene to ensure that no IAPS are transmitted off-site for the duration of the proposed works
Land & Soils	▪ An Outline Construction Environmental Management Plan (OCEMP) has been prepared by DOBA (DOBA, 2025; submitted with the planning application under separate cover). The OCEMP address construction waste, construction environmental management (including a surface water management plan) and construction traffic management. Following appointment, the contractor will be required to further develop the OCEMP and prepare and project specific CEMP, for approval by Louth County Council prior to any works commencing. The project specific CEMP will provide detailed construction phasing, waste management and methods to manage and prevent any potential emissions to ground and surface water with regard to the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA-C532', CIRIA, 2001). The project specific CEMP will take cognisance of measures outlined in the EIAR and OCEMP submitted with the planning application. ▪ The project specific CEMP will be implemented for the duration of the construction phase, covering construction and waste management activities that will take place during the construction phase of the proposed development. ▪ Contract and procurement procedures will ensure that all imported aggregates and materials required for the construction of the Proposed Development will be sourced from reputable suppliers operating in a sustainable manner and in accordance with industry conformity/compliance standards and statutory obligations. The importation of aggregates and materials will be subject to management and control procedures which will include testing for contaminants, invasive species and other anthropogenic inclusions and assessment of the suitability for use in accordance with engineering and environmental specifications for the Proposed Development. Therefore, any unsuitable material will be identified prior to unloading / placement onsite. ▪ Excavated soils will be carefully managed and maintained in order to minimise potential impact on soil quality and soil structure. Handling of soils will be undertaken in accordance with documented procures set out in the OCEMP (DOBA, 2025) and the project specific CEMP in order to protect ground and minimise airborne dust. The normal measures required to prevent airborne dust emissions and associated nuisance arising from site work will be in place including measures to prevent uncovered soil drying out leading to wind pick up of dust and mud being spread onto the local road network and adjoining properties. This may require additional wetting at the point of dust release, dampening down during dry weather and wheel cleaning for any vehicles leaving the Site.

Aspect	Construction and Demolition Mitigation
	Furthermore, as documented in the OCEMP (DOBA, 2025a), a minimum 1.8m hoarding will also be provided around the site works to minimise the dispersion of dust from the working areas. ▪ Soil and subsoil materials to be reused within the Proposed Development (i.e., for engineering fill and landscaping) will be subject to an assessment of the suitability for use in accordance with engineering and environmental specifications for the Proposed Development. This will include: - Define the criteria by which the suitability of the soils for reuse will be assessed (e.g., analytical parameters and limits), the engineering requirements such as geotechnical parameters for the material to be used within the works. - Delineation of areas where excavated soil is intended for disposal off-site as waste, and where it is intended for reuse on site. - Identification and recording of the location from where the soil will be excavated and its proposed reuse location and function. - Engineering assessment to confirm its suitability for reuse. - Any proposed treatment or processing required to enable its reuse, as well as any associated treatment permits, or licences required. ▪ Segregation and storage of soils for re-use on-site or removal off-site and waste for disposal off-site will be segregated and temporarily stored on-site pending removal or for reuse on-site in accordance with the OCEMP (DOBA, 2025) and the project specific CEMP which will be prepared by the main contractor in advance of construction works commencing. ▪ Where possible, stockpiling of soil and stone on-site will be avoided. However, in the event that stockpiling is required, stockpiled materials, pending reuse on-site, will be located away from the location of any sensitive receptors (watercourse and drain). As documented in the OCEMP (DOBA, 2025), stockpiles of loose material will be a minimum of 20m from drains. When a stockpile has been sampled for re-use or waste classification purposes, it shall be considered to be complete, and no more soil shall be added to that stockpile prior to removal. An excavation/stockpile register shall be maintained on-site. ▪ Prior to site works commencing, the OCEMP (DOBA, 2025) will be updated to reflect specific measures to minimise waste generation and resource consumption, including providing details of proposed waste contractors and destinations for each waste stream. ▪ The reuse of suitable excavated soil and bedrock for the proposed development (i.e., landscaping or engineering) will be undertaken in accordance with the engineered design and landscape plan for the proposed development. As documented in the OCEMP (DOBA, 2025), rock reusability testing carried out by the applicant show the existing rock is suitable for use as 6F2 capping material across the site subject to appropriate material testing and grading onsite. Soil including topsoil and subsoil will be segregated and stored appropriately to prevent deterioration of soil structure and quality to ensure the material will be suitable for re-use onsite. ▪ Surplus material, not suitable for re-use on-site, will be segregated, and stockpiled appropriately for removal off-site. For any excavated material identified for removal offsite, while assessment and approval of acceptance at a destination re-use, recovery site or waste facility is pending, excavated soil for recovery/disposal shall be stockpiled as follows: - A suitable temporary storage area shall be identified and designated. - All stockpiles shall be assigned a stockpile number.

Aspect	Construction and Demolition Mitigation
	- Material identified for reuse on site, off site and waste materials will be individually segregated; and all segregation, storage & stockpiling locations will be clearly delineated on the Site drawings. - Soil stockpiles will be covered to prevent run-off from the stockpiled material generation and/or the generation of dust. - Material identified for reuse on site, off site and waste materials will be individually segregated; - Any waste that will be temporarily stored / stockpiled will be stored on impermeable surface high-grade polythene sheeting, hardstand areas or skips to prevent cross-contamination of the soil below or cross contamination with soil. - Regular watering will take place to ensure the moisture content is high enough to increase the stability of the soil and thus suppress dust. - Stockpiles will be a minimum of 20m from drains. ▪ Any waste generated from construction activities, including concrete, asphalt and soil stockpiles, will be managed in accordance with the procedures outlined in the OCEMP (DOBA, 2025) and the project specific CEMP (to be developed by the main contractor in advance of construction works commencing) and will be stored onsite in such a manner as to: - Prevent environmental pollution (bunded and/or covered storage, minimise noise generation and implement dust/odour control measures, as may be required). - Maximise waste segregation to minimise potential cross contamination of waste streams and facilitate subsequent re-use, recycling and recovery. - Prevent hazards to site workers and the general public during Construction stage (largely noise, vibration and dust). ▪ All surplus materials and any waste will be removed off-site in accordance with the requirements outlined in the OCEMP (DOBA, 2025) and the project specific CEMP (to be developed by the main contractor in advance of construction works commencing) and will be managed in accordance with all legal obligations. It will be the contractor's responsibility to either; obtain a waste collection permit or, to engage specialist waste service contractors who will possess the requisite authorisations, for the collection and movement of waste offsite. ▪ Where appropriate, excavated soil and material intended for recovery or disposal offsite will require appropriate waste classification in order to select an appropriate receiving facility. Assessment of the excavated material will be carried out with due regard to the following guidance and legislation: - Environmental Protection Agency document entitled Waste Classification; List of waste and determining if waste is Hazardous or Non-Hazardous. - EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002). - Environmental Protection Agency documented entitled Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities. - Environment Agency, 2018. Technical Guidance WM3: Guidance on the classification and assessment of waste. - Any other guidance or legislation that might be applicable or relevant at the time of disposal. ▪ The re-use of soil and rock offsite will be undertaken in accordance with all statutory requirements and obligations including where appropriate re-use as by-product in

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	accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011 (SI No. 126 of 2011) as amended. ▪ Any surplus material not suitable for re-use as a by-product and other waste materials arising from the construction phase will be removed offsite by an authorised contractor and sent to the appropriately authorised (licensed/permitted) receiving waste facilities. As only authorised facilities will be used, the potential impacts at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures. ▪ Any waste soils will be transported under a valid waste collection permit issued under the Waste Management (Collection Permit) Regulations 2007, as amended and will be delivered to an appropriately authorised waste management facility. ▪ Materials and waste will be documented prior to leaving the Site. All information will be entered into a waste management register kept on the site. ▪ Vehicles transporting material with potential for dust emissions to an off-site location shall be enclosed or covered with a tarpaulin at all times to restrict the escape of dust. ▪ As documented in the OCEMP (DOBA, 2025), Public roads outside the Site will be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary. Trucks entering / leaving the site will pass through a wheel washing system. The wheels of all Lorries will be cleaned prior to leaving the Site so that traffic leaving the Site compound will not generate dust or cause the build-up of aggregates and fine material in the public domain. This will be carried out in a dedicated wash down zone with dedicated site personnel. The correct use and management of these will be undertaken by the appointed contractor to ensure that there is no harm or impact to the receiving water environment. ▪ The use of cementitious grout during the construction of footpaths and other site infrastructure will be required. Any potential impact to water quality will be avoided through the use of appropriate design and methods that will be implemented by the Contractor and in accordance with the OCEMP (DOBA, 2025), the project specific CEMP (which will be developed by the main contractor in advance of construction works commencing) and relevant industry standards. ▪ Where possible precast concrete will be used for concrete works. However, where cast-in-place concrete is required (i.e., foundations, footpaths), all work will be carried out to avoid any contamination of the receiving water environment. All work must be carried out in dry conditions and be effectively isolated from any groundwater. ▪ The following mitigation measures are outlined in the OCEMP (DOBA, 2025). - Any in-situ concrete work to be lined and areas bunded (where possible) to stop any accidental spillage. - No direct discharges made to waters where there is potential for cement or residues in discharge. - Designated impermeable cement washout areas must be provided and which are to drain into the designated settlement tank on-site pending removal offsite. - Concrete batching will take place off site or in a designed area with an impermeable surface. - For concrete mixers, control measures will be employed during cleaning to ensure no impulsive hammering is undertaken at the mixer drum. - Concrete wash down and wash out of concrete trucks will take place off site or in an appropriate facility. - All 'wash out' of concrete trucks will take place off site and any excess concrete is not to be disposed of on site.

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	▪ In addition to the measures set out in the OCEMP (DOBA, 2025), weathering forecasting should be utilised to plan dry days for concrete pours. Prior to pours, the designated area of the site shall be free of standing water and plastic covers will be ready in the case of sudden rainfall event. ▪ Fuelling and lubrication of equipment will be carried out in a designated area of the site away from any watercourses and drains (where not possible to carry out such activities offsite). ▪ As documented in the OCEMP (DOBA, 2025), any diesel, fuel or hydraulic oils stored on-site will be stored in designated areas, these areas will be bunded and located away from surface water drainage and features. The use of cleaning chemicals will be kept to a minimum. There will be clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage. Adequate security will be provided by the appointed contractor to potential pollutants against vandalism. ▪ Bunds will have regard to Environmental Protection Agency guidelines 'Amendment to IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities' (EPA, 2013). All tank and drum storage areas will, as a minimum, be bunded to a volume not less than the greater of the following: - 110% of the capacity of the largest tank or drum within the bunded area; or - 25% of the total volume of substance that could be stored within the bunded area. ▪ All fuel storage areas, which will be located outside of the predicted flood zone (IE Consulting, 2025), will be bunded in the site compound and will be clearly marked. As documented in the OCEMP (DOBA, 2025), the bund will be at least 50m away from drains, excavations, and other locations where it may cause contamination. Furthermore, no storage of hydrocarbons or any polluting chemicals will occur within 10m of the SAC/ SPA. Fuel will then be transported from the compound to the plant and equipment in mobile units based on need, a dedicated fuel fill point will be set up on site with all plant brought to this point for filling. ▪ Spill kits will be kept in these areas. Site crew will be trained in appropriate refuelling techniques. Equipment will not be left unattended during refuelling. Refuelling of construction machinery shall be undertaken in designated areas away from surface water drainage in order to minimise potential contamination of the water environment. Spill kits shall be kept in these areas in the event of spillages. ▪ As documented in the OCEMP (DOBA, 2025), the contractor will maintain an emergency response action plan which will cover any foreseeable risks. ▪ Emergency procedures will be developed by the main contractor in advance of works commencing and spillage kits will be available on-site including in vehicles operating on-site. Construction staff will be familiar with emergency procedures through induction, toolbox talks, and method statements to ensure that all staff members are well-prepared and knowledgeable about the necessary steps to take in the event of an emergency (e.g., accidental fuel spillages).. Remedial action will be immediately implemented to address any potential impacts in accordance with industry standards and legislative requirements. - Any required emergency vehicle or equipment maintenance work will take place in a designated impermeable area within the site. - Emergency response procedures will be put in place, in the unlikely event of spillages of fuels or lubricants. - Spill kits including oil absorbent material will be provided so that any spillage of fuels, lubricants or hydraulic oils will be immediately contained. - In the event of a leak or spill from equipment in the instance of a mechanical breakdown during operation, any contaminated soil will be removed from the

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	proposed development site and compliantly disposed off-site. Residual soil will be tested to validate that all potentially contaminated material has been removed. This procedure will be undertaken in accordance with industry best practice procedures and standards. - All construction works staff will be familiar with emergency procedures for to be implemented in the event of accidental fuel spillages. - All construction works staff on-site will be fully trained on the use of equipment. ▪ This procedure will be undertaken in accordance with industry best practice procedures and standards. These measures will ensure that there is minimal risk to the receiving land, soil and geological environment associated with the construction phase of the proposed development. ▪ Welfare facilities have the potential, if not managed appropriately, to release organic and other contaminants to ground or surface water courses. Foul drainage from temporary welfare facilities during the construction phase of the Proposed Development will be discharged to temporary holding tank(s) the contents of which will periodically be tankered offsite to a licensed facility. All waste from welfare facilities will be managed in accordance with the relevant statutory obligations by an appropriately authorised contractor. ▪ Any connection to the public foul drainage network during the construction phase of the Proposed Development will be undertaken in accordance with the necessary temporary discharge licences issued by UE
Water & Hydrology	▪ An Outline Construction Environmental Management Plan (OCEMP) has been prepared by DOBA (DOBA, 2025; submitted with the planning application under separate cover). The OCEMP address construction waste, construction environmental management (including a surface water management plan) and construction traffic management. Following appointment, the contractor will be required to further develop the OCEMP and prepare and project specific CEMP, for approval by Louth County Council prior to any works commencing. The project specific CEMP will provide detailed construction phasing, waste management and methods to manage and prevent any potential emissions to ground and surface water with regard to the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA-C532', CIRIA, 2001). The project specific CEMP will take cognisance of measures outlined in the EIAR and OCEMP submitted with the planning application. ▪ The project specific CEMP will be implemented for the duration of the construction phase, covering mitigation works that 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 water and surface runoff. ▪ Control of Management of works nears water courses. ▪ Control of Management of materials from off-site sources. ▪ Appropriate fuel and Chemical handling, transport and storage. ▪ Management of accidental release of contaminants at the site. ▪ The construction works will be managed in accordance with all statutory obligations and regulations and with standard international best practice. Good construction management practices will minimise the risk of pollution from construction activities at the site including but not limited to: ▪ CIRIA document entitled "Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors" (2001). ▪ CIRIA document entitled "Environmental Good Practice on Site (C741)" (2015).

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	▪ Enterprise Ireland Oil Storage Guidelines (BPGCS005). ▪ Environmental Protection Agency (EPA) document entitled "IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities" (2013). ▪ CIRIA document entitled "SuDS Manual (C697)" (2007). ▪ UK Environment Agency document entitled "UK Pollution Prevention Guidelines (PPG)" (2004). ▪ CIRIA document entitled "Control of Water Pollution from Linear Construction Projects: Technical Guidance (C648)" (2006). ▪ Inland Fisheries Ireland document entitled "Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters" (2016). ▪ There will be no direct discharge to groundwater or surface water during the construction phase of the Proposed Development. ▪ All run-off from the site or any areas of exposed soil will be managed as required with temporary pumping and following appropriate treatment as required. Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to onsite settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge at a controlled rate. Excavation works will be in accordance with the requirements of the Office of Public Works (OPW) and Inland Fisheries Ireland (IFI). ▪ Where dewatering of shallow groundwater is required or where surface water runoff must be pumped from the excavations, water will be managed in accordance with best practice standards (i.e., CIRIA C750), the OCEMP (DOBA, 2025), the project specific CEMP and regulatory consents to minimise the potential impact on the local groundwater flow regime within the soil and bedrock. ▪ All water leaving the site during construction will be desilted using standard techniques including silt busters and silt socks. Local silt traps will be established onsite, these will be reviewed and moved regularly as required. Where required, the water will also be directed through a hydrocarbon interceptor prior to discharge from the site. ▪ As documented in the OCEMP (DOBA, 2025), a buffer zone of 5m from the adjacent water course will be established by erecting a temporary fence along the length of the site in that area. This fence will comprise a silt curtain to prevent surface water runoff to the water course and will be retained in place for the duration of the construction period until soft landscaping of the buffer zone is implemented. ▪ Unauthorised discharge of water (groundwater / surface water runoff) to ground, drains or watercourses will not be permitted. Existing surface water drainage located along public roads (i.e., Bóthar Maol, the R172 Blackrock Road and Finnabair Crescent) will be protected for the duration of the works. The appointed Contractor will ensure that the discharge of water to ground, drains or watercourses will be in accordance with the necessary discharge licences issued by UE under Section 16 of the Local Government (Water Pollution) Acts and Regulations for any water discharges to sewer or from Louth County Council under Section 4 of the Local Government (Water Pollution) Act 1977, as amended in 1990 for discharges to surface water. ▪ As documented in the OCEMP (DOBA, 2025), a buffer zone of 20m will be maintained between onsite drains including the unnamed streams located along the eastern and northern boundaries of the site and stockpiles of loose materials. Stockpiles and runoff areas will have suitable silt barriers to prevent runoff of fines into the drainage systems. ▪ There may be a temporary increase in the exposure of the underlying shallow groundwater during excavation works. Surface water runoff will be prevented from entering open excavations with sandbags or other approved methods proposed by the appointed

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	contractor. Furthermore, the appointed contractor will ensure that machinery does not enter the groundwater if encountered during construction. ▪ All works carried out within the wetland area in the eastern portion of the site (i.e., at the entrance to the Proposed Development) will be undertaken to prevent any erosion of sediment of other potential contamination of surface water runoff. Furthermore, the unnamed stream located at the eastern boundary of the site will be protected or temporary diversion put in place (i.e., straw bales, silt fences and/or sandbags) for the duration of the construction phase with cognisance to Inland Fisheries Ireland (IFI) Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters (IFI, 2016) and the National Roads Authority (now Transport Infrastructure Ireland) Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes (NRA, 2008). ▪ To ensure protection of the downstream lands and watercourse on the eastern boundary there will be an installation of a silt curtain along the entire length of the boundary of the site where works are proposed; specifically, between the site works and the edge of the development site. The purpose of this membrane will be to prevent any sediment discharge from draining into the watercourse. These specific measures to include the silt curtain will be installed on-site at the preliminary Phase 1 stage of construction and remain in-situ and be adhered to until the development is complete. The project specific CEMP (which will be prepared by the main contractor in advance of construction works commencing) will identify how this silt curtain will be installed and maintained throughout the construction phase. ▪ A regular review of weather forecasts of heavy rainfall will be conducted, and a contingency plan will be prepared for before and after such events to minimise any potential nuisances. As the risk of the break-out of silt laden run-off is higher during these weather conditions, no work will be carried out during such periods where possible. ▪ All new infrastructure will be installed and constructed to the relevant codes of practice and guidelines. ▪ All surface water infrastructure will be pressure tested by an approved method during the construction phase and prior to connection to the public networks, all in accordance with Local Authority Requirements. ▪ Connections to the public network are be carried out to the approval and / or under the supervision of the Local Authority prior to commissioning. ▪ All new sewers will be inspected by CCTV survey post construction; to identify any possible physical defects for rectification prior to operational phase. ▪ In respect of surface water networks, during the construction period the system and traps will be inspected a minimum 4 times a year as the accumulation of silt is prevalent during this period. The number of inspections should be pro-active and if silting is found to be excessive in any of the apparatus the number of inspections will be raised accordingly and continually monitored and reviewed. ▪ Pipe ends associated with the surface water network will be blocked/capped off with proprietary fittings until connected to the completed storm-water system. ▪ The volume of fuel stored onsite will be kept to a minimum and there will be no bulk Fuelling and lubrication of equipment will be carried out in a designated area of the site away from any watercourses and drains (where not possible to carry out such activities offsite). ▪ As documented in the OCEMP (DOBA, 2025), any diesel, fuel or hydraulic oils stored on-site will be stored in designated areas, these areas will be bunded and located away from surface water drainage and features. It is noted that the use of cleaning chemicals will be kept to a minimum. There will be clear labelling of containers so that appropriate remedial

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	measures can be taken in the event of a spillage. Adequate security will be provided by the appointed contractor to potential pollutants against vandalism.
	▪ Bunds will have regard to Environmental Protection Agency guidelines 'Amendment to IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities' (EPA, 2013). All tank and drum storage areas will, as a minimum, be bunded to a volume not less than the greater of the following:
	  ▪ 110% of the capacity of the largest tank or drum within the bunded area; or
	  ▪ 25% of the total volume of substance that could be stored within the bunded area.
	▪ All fuel storage areas, which will be located outside of the predicted flood zone (IE Consulting, 2025), will be bunded in the site compound and will be clearly marked. As documented in the OCEMP (DOBA, 2025), the bund will be at least 50m away from drains, excavations, and other locations where it may cause contamination. Furthermore, no storage of hydrocarbons or any polluting chemicals will occur within 10m of the SAC/ SPA. Fuel will then be transported from the compound to the plant and equipment in mobile units based on need, a dedicated fuel fill point will be set up on site with all plant brought to this point for filling.
	▪ Spill kits will be kept in these areas. Site crew will be trained in appropriate refuelling techniques. Equipment will not be left unattended during refuelling. Refuelling of construction machinery shall be undertaken in designated areas away from surface water drainage in order to minimise potential contamination of the water environment. Spill kits shall be kept in these areas in the event of spillages.
	▪ The use of cementitious grout during the construction of footpaths and other site infrastructure will be required. Any potential impact to water quality will be avoided through the use of appropriate design and methods that will be implemented by the Contractor and in accordance with the OCEMP (DOBA, 2025), the project specific CEMP (which will be developed by the main contractor in advance of construction works commencing) and relevant industry standards.
	▪ Precast concrete will be used for concrete works. However, where cast-in-place concrete is required (i.e., foundations, footpaths), all work will be carried out to avoid any contamination of the receiving water environment. All work must be carried out in dry conditions and be effectively isolated from any groundwater.
	▪ The following mitigation measures are outlined in the OCEMP (DOBA, 2025).
	  ▪ Any in-situ concrete work will be lined and areas bunded (where possible) to stop any accidental spillage.
	  ▪ No direct discharges made to waters where there is potential for cement or residues in discharge.
	  ▪ Designated impermeable cement washout areas must be provided which will drain into the designated settlement tank on-site pending removal offsite.
	  ▪ Concrete batching will take place off site or in a designed area with an impermeable surface.
	  ▪ For concrete mixers, control measures will be employed during cleaning to ensure no impulsive hammering is undertaken at the mixer drum.
	  ▪ Concrete wash down and wash out of concrete trucks will take place off site or in an appropriate facility.
	  ▪ All 'wash out' of concrete trucks will take place off site and any excess concrete will not be disposed of on site.

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	▪ In addition to the measures set out in the OCEMP (DOBA, 2025), weathering forecasting will be utilised to plan dry days for concrete pours. Prior to pours, the designated area of the site shall be free of standing water and plastic covers will be ready in the case of sudden rainfall event. ▪ Emergency procedures will be developed by the main contractor in advance of works commencing and spillage kits will be available on- site including in vehicles operating on-site. Construction staff will be familiar with emergency procedures through induction, toolbox talks, and method statements to ensure that all staff members are well-prepared and knowledgeable about the necessary steps to take in the event of an emergency (e.g., accidental fuel spillages). Remedial action will be immediately implemented to address any potential impacts in accordance with industry standards and legislative requirements. ▪ Any required emergency vehicle or equipment maintenance work will take place in a designated impermeable area within the site. ▪ Emergency response procedures will be put in place, in the unlikely event of spillages of fuels or lubricants. ▪ Spill kits including oil absorbent material will be provided so that any spillage of fuels, lubricants or hydraulic oils will be immediately contained. ▪ In the event of a leak or spill from equipment in the instance of a mechanical breakdown during operation, any contaminated soil will be removed from the site and compliantly disposed off-site. Residual soil will be tested to validate that all potentially contaminated material has been removed. This procedure will be undertaken in accordance with industry best practice procedures and standards. ▪ All construction works staff will be familiar with emergency procedures for in the event of accidental fuel spillages. ▪ All construction works staff on-site will be fully trained on the use of equipment. ▪ This procedure will be undertaken in accordance with industry best practice procedures and standards. These measures will ensure that there is minimal risk to the receiving land, soil and geological environment associated with the construction phase of the Proposed Development. ▪ Stockpiled materials pending removal offsite or reuse onsite will be located in designated areas only and there will be no storage of materials within 20m of the onsite drains or the unnamed streams located along the eastern and northern boundaries of the site. Stockpiles will be located, arranged, and managed so that the risk to the receiving water from silt and contamination is minimised. ▪ Stockpiles and runoff areas following clearance will have suitable silt barriers to prevent runoff of fines into the drainage system. Stockpiles of earthwork and site clearance materials will be located on impermeable surface and covered with appropriate measures. In addition, silt traps will be placed in road gullies to capture any excess silt from the working areas. ▪ Welfare facilities have the potential, if not managed appropriately, to release organic and other contaminants to ground or surface water courses. All waste from welfare facilities will be managed in accordance with the relevant statutory obligations through either a temporary connection to mains foul sewer (subject to receipt of the relevant consent from UE) or by tankering of waste offsite by an appropriately authorised contractor. ▪ As documented in the OCEMP (DOBA, 2025), Public roads outside the Site will be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as

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	necessary. Trucks entering / leaving the site will pass through a wheel washing system. The wheels of all Lorries will be cleaned prior to leaving the Site so that traffic leaving the Site compound will not generate dust or cause the build-up of aggregates and fine material in the public domain. This will be carried out in a dedicated wash down zone with dedicated site personnel. The correct use and management of these will be undertaken by the appointed contractor to ensure that there is no harm or impact to the receiving water environment. ▪ Discharge from any vehicle wheel wash area will be directed to the onsite settlement tank for discharge to the UE foul network (subject to receipt of the relevant consent from UE) or by tankering of waste offsite by an appropriately authorised contractor. Any debris or sediment within the wheel-wash will be emptied periodically for disposal offsite at a licenced facility.
Biodiversity	<u>Mitigation 1: Robust Construction Environmental Management Plan (CEMP)</u> ▪ A CEMP based on the mitigation commitments presented in the various EIAR Chapters will be prepared for the Construction Phase. A planning stage CMP has been prepared for submission with the planning application (DOBA, 2025b), which entails an Environmental Management Section. This outline document provides a framework for the contractor to develop further as the project moves into the Construction Phase. ▪ The Construction Phase CEMP will collate and set out the environmental control measures required to minimise, and control adverse environmental impacts associated with the Proposed Development. It is intended that the CEMP will be a live document, which will capture all Construction Phase environmental mitigation measures included within the EIAR, NIS and any other measures which become apparent through the EIA consultation process and/or are prescribed through planning conditions etc. The CEMP will include enabling and decommissioning works. ▪ All construction and operations are to be carefully planned and implemented with a series of environmental management and control procedures. The CEMP will detail the general pollution prevention principles and measures which are to be implemented, water and sediment management measures to prevent pollution during the construction phase and measures to ensure the potential for pollution fuel, oil, chemicals and other construction materials is minimised. ▪ The Contractor shall engage a suitably experienced ecologist, the Project Ecologist, who will be a full member of a relevant professional institute such as CIEEM, have relevant experience in the management of ecological constraints during construction. The Project Ecologist shall be appointed sufficiently in advance of construction to arrange for any mitigation requirements to be incorporated into the CEMP and any site-specific method statements. ▪ In advance of commencement of the Construction Phase, the disused existing onsite well, securely located within a pump house in the north-western portion of the Site will be fully decommissioned by an experienced borehole specialist in accordance with relevant guidelines, *'Good practice for decommissioning redundant boreholes and wells'* (UK Environment Agency, 2012). This will ensure that redundant well is made both safe and structurally stable and will be suitably backfilled or sealed to prevent groundwater pollution and flow of water between different aquifer units. ▪ The construction management of the Site will take account of the recommendations of the Construction Industry Research and Information Association (CIRIA) guides '*Control of Water Pollution from Construction Sites'* and *'Groundwater control - design and practice'* to minimise as far as possible the risk of pollution.

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	▪ The Contractor shall take all necessary precautions to prevent pollution or siltation of surface or groundwaters from construction activities. The following management, control and mitigation measures will therefore be implemented: o Any groundwater temporarily dewatered during the construction of the attenuation basin, wastewater pumping station and any deep building foundations in localised areas in the eastern portion of the site will be treated via the installation of a temporary *in-situ* water treatment system; o This system will be designed and sized to ensure that all pumped groundwater water is treated prior to discharge to a selected onsite location (via a temporary soakaway). o The Contractor will be required to provide a site-specific dewatering plan, clearly setting out proposed excavation methodology, estimated dewatering rates, details of the proposed treatment system, and discharge location. o Surface water attenuation measures are to be designed which will not be overwhelmed by one-off adverse precipitation events. o Where practical, cut-off V drains will be utilised to divert water entering site and reduce the amount of water to be managed on-site. Attention will be given to the maintenance and protection of all drains and temporary channels to minimise scour and the mobilisation of suspended solids (e.g. lining with hessian or clean stone, check dams, silt fencing etc.). o Mud will be controlled at entry and exits to the site using wheel washes and/or road sweepers, and tools and plant will be washed out and cleaned in designated areas. Wheel washings will be contained and treated prior to discharge. o Runoff will be directed to and intercepted by temporary settlement lagoons. The size of the settlement lagoon will be determined from predicted flow rates and retention times based on sediment particle size and density. o Neither groundwater nor surface water runoff from the working areas will be permitted to discharge directly to the environment. Runoff generated within the site during construction will be filtered and treated to remove hydrocarbons and sediment. Total Suspended Solids (TSS), pH/EC and colour will be monitored daily and outlets from sedimentation ponds will incorporate a turbidity monitor with alarm at a high level. o Subject to consent, water that is unpolluted, aside from its silt content, may be pumped out over adjacent vegetated ground, where appropriate, with consideration given to groundwater level and saturation, wildlife importance and proximity to drainage channels. o In the event of surface water failing to meet the required standards water will be recirculated to the inlet of the sediment pond to provide further time for settlement. A penstock will be provided on the outlet from the sediment pond to control discharge from the site. o The performance of the surface water drainage network will be maintained and monitored throughout the construction of the proposed development, noting that the proposed storm system will include permanent hydrocarbon separators. o Where the Contractor utilises pumping to drain works areas, a back-up pump and generator must be provided on site for use in the event of the primary pump failing. o Procedures are to be put in place to ensure the identification, remediation and correct reporting of any silt or other pollution incidents that may occur. - During localised construction works around the northern and eastern drainage channels (to facilitate the installation of the proposed 2no.

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	outfalls/headwalls), any minor volumes of stripped soils will be stockpiled a minimum distance of 10m from each channel and will be appropriately covered. A temporary stormwater management system will be implemented by the Contractor. - Areas will be designated where stockpiles will be established in order to facilitate the efficient transfers of material within the site. Stockpiles will be stabilised as soon as possible (e.g. sealed, closed over, seeded or covered using geotextile mats), and bunded by earth or silt fences at the toe to intercept silt-laden runoff during rainfall events. - Appropriate working practices to avoid the repetitive handling of excavated substrates, minimise vehicle movements, limit the size, number and frequency of stockpiles, reduce the compaction and erosion of soils etc., and control the generation of dust. The implementation of a construction traffic management plan and controls on the locations of plant and materials will minimise the compaction and erosion of soil. Excavation is to be restricted during high winds and heavy rainfall to minimise dust generation and contaminated surface runoff. - Excavated materials will be inspected for signs of possible contamination, such as staining or strong odours. Should any be noticed, substrates are to be segregated and samples analysed for contaminants to determine an appropriate means of disposal to licensed/permitted facilities appropriate for the waste classification. - In order to prevent any potential surface water/groundwater impacts via. release of hydrocarbon/chemical contaminants the following standard measures will be implemented: o The Contractor will ensure all site personnel are trained in the handling of materials, the sensitive nature of the receiving environment, the drainage system and the consequences of accidental spillages. o Fuels, lubricants and hydraulic fluids for equipment used on the construction site, as well as any solvents, oils, and paints, will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment according to best codes of practice; o Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the proposed development for disposal or recycling; o Any spillage of fuels, lubricants or hydraulic oils will be immediately contained and the contaminated soil removed from the proposed development and properly disposed of; o All site vehicles used will be refuelled in bunded and adequately sealed and covered areas in the construction compound area. o Strict supervision of contractors will be adhered to in order to ensure that all plant and equipment utilised on-site is in good working condition. Any equipment not meeting the required standard will not be permitted for use within the site. This will minimise the risk of groundwater becoming contaminated through site activity. o All oil stored on site for construction vehicles will be kept in a locked and bunded area; o Generators, pumps and similar plant will be placed on drip-trays to prevent contamination; o All site vehicles used will be refuelled in bunded areas;

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	○ All temporary construction fuel tanks will also be located in a suitably bunded area and all tanks will be double skinned. Relevant Material Safety Data Sheets along with oil absorbent materials will be kept on site in close proximity to any fuel storage tanks or bowsers during proposed site development works; and, ○ All fuel/oil deliveries to on-site oil storage tanks will be supervised, and records will be kept of delivery dates and volumes. ○ Fixed plant shall be self-bunded; mobile plant shall be in good working order, kept clean, fitted with drip trays where appropriate and subject to regular inspection. Drip trays will be covered, emptied regularly as required and disposed of off-site having regard for local waste management legislation. ○ Spill kits and oil absorbent material shall be carried with mobile plant and located at vulnerable locations around the site to reduce the risk of spillages entering the sub-surface or groundwater environment; booms shall be held on-site for works near drains or dewatering points. ○ Procedures are to be put in place to ensure the identification, remediation and correct reporting of any fuel, oil, chemical or other pollution incidents that may occur. In order to prevent any potential surface water/groundwater impacts via. release of cementitious materials the following measures will be implemented: ○ No mixing of concrete will be carried out on site. The measures detailed below will be employed where poured concrete is being used in the construction process; ○ The production, transport and placement of all cementitious materials will be strictly planned and supervised. Site batching/production of concrete will not be carried out on site and therefore these aspects will not pose a risk to the waterbodies present, namely any temporarily exposed groundwater, or local drainage channels, wetlands or Dundalk Bay; ○ Shutters will be designed to prevent failure. Grout loss will be prevented from shuttered pours by ensuring that all joints between panels achieve a close fit or that they are sealed; ○ Any spillages will be cleaned up and disposed of correctly; ○ Where concrete is to be placed by means of a skip, the opening gate of the delivery chute will be securely fastened to prevent accidental opening; ○ Where possible, concrete skips, pumps and machine buckets will be prevented from slewing over water when placing concrete; and, ○ Surplus concrete will be returned to batch plant after completion of a pour. ○ The Contractor will dispose of all alkaline wastewaters and contaminated stormwater offsite having regard for local waste management legislation. ▪ The Contractor will implement procurement procedures to ensure that aggregate, fill material and topsoil are acquired from reputable sources with suitable environmental management systems as well as regulatory and legal compliance. ▪ The Contractor will vet the source of aggregate, fill material and topsoil imported to the site in order to ensure that it is of a reputable origin and that it is “clean” (i.e., it will not contaminate the environment). ▪ All material to be disposed of off-site to a facility licensed having regard for local waste management legislation. Where material is to be stockpiled on site prior to disposal, the Contractor will control all run-off to prevent contamination of surrounding watercourses (via silt-fencing etc.).

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	▪ The CEMP will include an Emergency Response Plan (ERP) based on the Contractor's Risk Assessment, to be reviewed and approved by the Project Ecologist. The ERP will include (but not limited to): o Training of relevant staff, including cover staff, in the implementation of the ERP and the use of spill kits; o Procedures to be undertaken in the event of the release of any sediment into a watercourse, or any spillage of chemicals, fuel, oil or other hazardous materials or wastes; o Procedures to be undertaken in the event of any non-compliance incidents with any permit or licence, or other such risks that could lead to a pollution incident, including flood risks; o The number, specification and location of all spill kits which shall be carried/kept on the site; o Information on clean-up and reporting procedures; etc. ▪ While it is expected that the site drainage system will be installed and commissioned early in the site construction programme and will therefore be operational for much of the Construction Phase, there will be a period of the construction phase during which the site drainage system will not be operational. The CEMP is required to cover this period and to deal with other issues during the Construction Phase. ▪ The lighting of the Construction Site during the hours of darkness will be limited to the minimum required for security purposes. Lights will be carefully directed only where they are required e.g., gates, plant, equipment etc. Light-spill will be controlled and lights will not be allowed to illuminate the various field boundary hedgerows and treelines at the Site. The contractor will ensure that a dark corridor is provided for commuting/ foraging bats and other wildlife to move around the margins of the Site and the retained north-south central hedgerow during the night, for the duration of the Construction Phase. <u>Mitigation 2: Pre-Construction Ecology Walkover</u> ▪ A suitably qualified Ecologist will be instructed to carry out an ecological walkover of the Site a minimum of one month prior to the commencement of works (including enabling works). These pre-commencement surveys will confirm whether any changes in the status of flora and fauna have occurred at or near the Site since the previous surveys were conducted and will advise further mitigation measures etc., as required. The results of these pre-commencement surveys will be provided to Louth CoCo prior to commencement of works on Site. <u>Mitigation 3: Waterbird Sensitive Construction Program</u> ▪ The CEMP will include a section setting out the construction programme and will include all the environmental control measures required to avoid disturbance to waterbird species, as set out below. The CEMP will also set out general measures to manage noise and vibration from construction activities that may be employed at the Site. ▪ All rock breaking, blasting and other high-intensity construction activities as may be required within the site <u>are to be programmed to take place outside the wintering season for coastal waterbird species (i.e. to take place between May and September)</u> to ensure that disturbance to wintering species is avoided. ▪ All discrete elements of Site construction close to the shore of Dundalk Bay (establishment of the main site access, construction of the bus stop and installation of proposed outfall and site drainage and discharge infrastructure in the north-east) <u>are to be programmed to take place outside the wintering season for coastal waterbird species</u>

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	(i.e. to take place between May and September) to ensure that disturbance to wintering species is avoided. ▪ It is noted that the above timing of works must also take into account the breeding bird season, and the breeding season for Common Frog, particularly during the works proposed as part of installing the main entrance to the Site. The works within this marshy, scrubby area of the Site will need to be conducted in a manner that minimise impacts to both breeding and wintering birds, as well as Common Frogs. For this Site, given the various ecological constraints, the preferred time for vegetation removal, site clearance and the works within the marshy area at the proposed main entrance, is within the months of September and October as detailed in Section 11.9.3.4. Mitigation 4: Timing of Vegetation Clearance ▪ To ensure compliance with the Wildlife Act 2000 as amended, the removal of areas of vegetation will not take place within the nesting bird season (March 1st to August 31st inclusive) to ensure that no significant impacts (i.e., nest/egg destruction, harm to juvenile birds) occur as a result of the Proposed Development. Where any removal of vegetation within this period is deemed unavoidable, a qualified ecologist will be instructed to survey the vegetation prior to any removal taking place. Should nesting birds be found, then the area of habitat in question will be noted and suitably protected until the ecologist confirms the young have fledged. ▪ Table 11-18 (refer to Chapter 11) provides guidance for when vegetation clearance is permissible. Information sources include The Herpetological Society of Ireland, British Hedgehog Preservation Society's *Hedgehogs and Development* and *The Wildlife (Amendment) Act, 2000*. ▪ The preferred period for vegetation clearance is within the months of September and October. Vegetation will be removed in sections working in a consistent direction to prevent entrapment of protected fauna potentially present (e.g., Hedgehog). Where this seasonal restriction cannot be observed, a check for active roosts and nests, as well as signs of amphibians and Lizards, will be carried out immediately prior to any Site clearance by an appropriately qualified ecologist and repeated as required to ensure compliance with legislative requirements. Mitigation 5: Invasive Species and Biosecurity Measures ▪ No species of plant listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011 were recorded at the Site during site surveys. As such, no significant risk of impacts relating to the spread of invasive plant species exists at the Site. Nevertheless, efforts should be made to remove such plants and minimise any risk of spread offsite. The potential exists for site operatives and machinery to result in the inadvertent spread of non-native plant species on site, should clothing, plant and machinery be contaminated with seed or fragments of such species prior to entry on site. ▪ Transport Infrastructure Ireland (2020) guidance '*The Management of Invasive Alien Plant Species on National Roads – Technical Guidance'* will be consulted with regards the treatment, removal and disposal of invasive flora at the Site. *Biosecurity Measures* The following measures will be adhered to, to avoid the introduction or dissemination of invasive species to and from the Site of the Proposed Development site. ▪ For the Construction Phase the contractor will prepare a project specific IAPS standard operating procedure document, in advance of work commencement. The document

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	should be prepared by an IAPS specialist and should cover the biosecurity measures to be taken, including the maintenance of records, to screen for the introduction of IAPS onsite, and to enable their tracing if such an introduction occurs; and to ensure no transmission of IAPS offsite. These measures to include: ○ Validation that all machinery / vehicles are free of IAPS, prior to their first introduction to site. ○ Certification from the suppliers that all imported soils and other fill/landscaping materials are free of IAPS ○ A regular schedule of site inspections across the IAPS growing seasons, for the duration of the construction works programme. ○ Validation that all machinery / vehicles are free of IAPS, prior to leaving the Site. ○ Appropriate and effective site biosecurity hygiene to ensure that no IAPS are transmitted off-site for the duration of the Proposed Works. <u>Mitigation 6: Protection of Small Mammals</u> ▪ As best-practise all construction-related rubbish on site e.g., plastic sheeting, netting etc. will be kept in a designated area and kept off ground level so as to prevent small mammals such as Hedgehogs from entrapment and death. ▪ Trenches/pits must be either covered at the end of each working day or include a means of escape for any animal falling in e.g., a plank or objects placed in the corner of an excavation. (Species such as badgers will continue to use established paths across a site even when construction work has started). ▪ Any temporarily exposed open pipe system will be capped in such a way as to prevent animals gaining access as may happen when contractors are off site. <u>Mitigation 7: Tree Protection</u> ▪ Protective tree fencing in compliance with BS 5837:2012 *'Trees in relation to design, demolition and construction – Recommendations'* will be erected prior to any Construction works being undertaken to prevent damage to the canopy and root protection areas of existing trees at the Site. The fencing should be signed off by a qualified arborist prior to Construction to ensure it has been properly erected. No ground clearance, earthworks, stock-piling or machinery movement will be undertaken within these areas. ▪ The project Arborist will be instructed prior to commencement on Site; to ensure that appropriate tree protection measures are in place. These measures will entail robust fencing around the root protection zones of all trees and hedgerows being retained on Site. ▪ An adequate level of signage will also be provided to highlight 'no work zones' and ensure that Site creep and damage to retained habitats does not occur. The vegetated margins of the Site and the main central north-south hedgerow are important habitats for birds, small mammals and bats at the Site. These must be sufficiently protected for the duration of the Construction Phase to ensure they remain effective habitat corridors. The project Arborist, the project Ecologist and the Site Manager will work together to ensure these habitats are protected for the duration of the project <u>Mitigation 8: Noise Control</u> ▪ Short-term increases in disturbance levels as a direct result of human activity and through increased generation of noise during the Construction Phase can have a range of impacts depending upon the sensitivity of the ecological receptor, the nature and duration of the disturbance and its timing.

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	▪ Noise generated during the Construction Phase of the Proposed Development could cause temporary disturbance to a number of faunal species in the vicinity of the Site of the Proposed Development. To minimise this disturbance, the following measures will be implemented: o Selection of plant with low inherent potential for generating noise. o Siting of plant as far away from sensitive receptors as permitted by site constraints. o Avoidance of unnecessary revving of engines and switch off plant items when not required. o Keep plant machinery and vehicles adequately maintained and serviced. o Proper balancing of plant items with rotating parts. o Keep internal routes well maintained and avoid steep gradients. o Minimise drop heights for materials or ensure a resilient material underlies. o Where noise originates from resonating body panels and cover plates, additional stiffening ribs or materials should be safely applied where appropriate. o Limiting the hours during which site activities likely to create high levels of noise are permitted. o Appointing a site representative responsible for matters relating to noise. o Monitoring typical levels of noise during critical periods and at sensitive locations. <u>Mitigation 9: Hedgehog Highways</u> ▪ By creating a number of separate private dwellings and gardens at a Site, the land becomes fragmented and largely inaccessible to species such as Hedgehog, which like to roam each night in search of food (garden pests e.g., slugs). This can easily be fixed by ensuring that the boundaries and barriers within and surrounding the Site i.e., garden fencing, railings and gates, are permeable for Hedgehogs. This can be achieved by: o the use of fence panels with 13 x 13 cm holes at ground level (Hedgehog holes), o leaving a sufficient gap beneath gates and leaving brick spaces at the base of brick walls. ▪ A variety of fence suppliers stock specific hedgehog-friendly fencing options, which can be easily incorporated at little or no additional cost. ▪ Hedgehog highways will be incorporated into the backgarden fences of the various dwellings at the Site of the Proposed Development, as well as the fencing along the vegetated outer boundaries of the Site. This will ensure habitat fragmentation for hedgehogs at the Site is minimised and will ensure habitat connectivity between the Site and the golf course and lands surrounding the Site is maintained. ▪ Including details of hedgehog-friendly features in the new homeowner's welcome pack will raise awareness and prevent homeowners from reversing these features, for instance blocking fence holes. <u>Mitigation 10: Protection of Common Frog</u> ▪ Based on the recommendations made within the Amphibian Survey Report (Gandola 2025) in Appendix 11.3, to mitigate the against colonisation of the construction zone by amphibians, excavation works will begin after the dispersal period of the current year's cohort of young amphibians (i.e, excavation works will be completed between the period of September and early February). ▪ A suitably qualified and licenced Ecological Clerk of Works will be retained for the duration of the construction phase of the development. ▪ The contractor will ensure that the wetland habitats and any temporary waterlogged features are not inadvertently allowed to offer suitable breeding habitat for frogs for

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	prolonged periods of times. This includes leaving heavy machinery tracks and typical construction endeavours (e.g., percolation test pits, excavations for footings etc.) uncovered. Therefore, all excavation works will be completed as soon is feasible, or at least covered with sheeting to prevent access by wildlife. Where possible, heavy machine depressions will be smoothed out. The specific aim of appropriate mitigation at this Site will be to ensure that the construction works do not make the Site more favourable to any amphibian populations that may exist either on-site or on the adjoining golf course. ▪ If feasible, and deemed advisable by the Ecological Clerk of Works (ECoW) based on site conditions at the time of works, an appropriate exclusion barrier to prevent entry and divert any amphibians away from the works area within the marshy area may also offer increased certainty that the site retains an "amphibian free" status. Any installed fencing will be accompanied by an accompanying precautionary survey by the ECoW to ensure that amphibians are not present prior to the initiation of clearance works. This ensures animals will not be locked into the works area. ▪ In the event that amphibians (of any life stage) are detected, they will be captured and translocated outside of the Site's redline boundary by the ECoW. Immature or adult frogs or newts will be moved beyond the exclusion fence whereas tadpoles and spawn will be translocated to the nearest suitable waterbody within 1-2km distance. The area of wetland marsh adjacent and to the north of the Site's eastern access road will be sufficient. ▪ If any habitats, waterbody or flooded depressions need to be drained or pumped to facilitate works, it will be done under the supervision of a suitably experienced ecologist/ ECoW to ensure that no amphibians or their larvae are present before the habitat is infilled or otherwise destroyed. Mechanical pumps will be fitted with a fine mesh screen in order to negate the chances of frogs or their larvae being sucked into the impeller mechanism. All capture and translocation works should the be required will be undertaken immediately in advance of site clearance works and under specific licence from National Parks and Wildlife Service.
Noise & Vibration	<u>Noise</u> ▪ Best practice control measures for noise from construction sites are found within 5228 Code of practice for noise and vibration control on construction and open sites (2009 +A1 2014) Part 1"*Construction noise impacts are expected to vary throughout the project, depending on the distance between construction activities and noise-sensitive receptors. The contractor will implement best-practice noise control measures to minimise any adverse effects on off-site sensitive locations."* ▪ The best practice measures set out in BS 5228 (2009) Part 1 includes guidance on several aspects of construction site mitigation measures, this includes the: - selection of quiet plant and equipment; - noise control at source of the noise; - screening, and; - public liaison. <u>Selection of Plant and Equipment</u> ▪ The noise impact of all plant and equipment should be assessed prior to selection of plant for the project. Where an item of plant is identified as noisy with the potential to cause a negative noise impact it should be reviewed to check if there is an alternative quieter version of the same plant to undertake the same construction task. <u>Noise Control at Source</u>

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	▪ Where replacing a noisy item of plant is not viable or practical, consideration should be given to control that noise at source. This includes modifying the piece of plant or equipment to generate less noise, using dampening to control vibration induced noise or rattling. The following best practice measures will be applied:- - All plant and equipment to be switched off when idling. - The use of white noise reversing alarms. - Restriction on the dropping and loading of materials to less sensitive hours. - The use of local screening for noisy activities or works with hand tools. - Not dropping materials onto hard surfaces and using rubber mats etc for the dropping of materials. - Ensure all plant and equipment is well maintained and cleaned, all lubrication should be in line with manufacturers guidelines. <u>Screening</u> ▪ Screening when used correctly can be an effective method of reducing the construction noise impact on the NSL's. The use of site hoarding and careful selection of areas for noise works, using site offices and the buildings being constructed to screen noise from the works. ▪ Local screening of noisy works with the use of temporary acoustic barriers, examples are provided below: - https://ventac.com/acoustic-products/noisebreak-acoustic-barrier/ - https://echobarrier.com/ <u>Public Engagement</u> ▪ A public liaison officer (site manager) will be put forward by the contractor to liaise with the local residents on matters relating to noise. Residents should be informed of any noise works scheduled where there is the potential to generate high levels of construction noise or if specialist works etc need to be conducted out of the working hours. This person should also be the point of contact for all complaints and be responsible for reviewing the noise monitoring results and exceedances. <u>Site Specific Recommendations</u> ▪ Table below outlines the recommended site-specific noise mitigation measures based on the attenuation required in Table 11-13.

<table>
<tr><th>Aspect</th><th>Construction and Demolition Mitigation</th></tr>
<tr><td></td><td>
<table>
<tr><th>Construction Stage</th><th>Recommended Noise Mitigation Measure</th></tr>
<tr><td>Site Setup</td><td>Erect a minimum 2.4m high site hoarding that blocks the line of sight between nois receiver.

Example construction for the site hoarding would be as follows:

• A 2.4m high and 9mm plywood (4.5 kg/m2). Barrier must be solid and not at the bottom or between adjacent panels

Local screening using the examples provided in General Recommendations section required around hand tools in addition to hoarding.

An absorptive lining should be considered for screening around hand tools will nee absorptive lining to avoid reflections increasing noise at other receivers.

On this project 5 NSL's have been identified it is recommended that a noise monitor sho on the boundary with the nearest noise sensitive locations closest to the works i.e. NSL' the most appropriate locations.</td></tr>
<tr><td>Substructure</td><td>Site hoarding to block line of sight. Local screening around noisy plant and equipment.

Noise monitoring as above</td></tr>
<tr><td>Superstructure</td><td>Local screening around saws/hammers where possible. Use external new building to from works where possible.

Noise monitoring as above</td></tr>
<tr><td>External finishes</td><td>Local screening around hand tools.

Noise monitoring as above</td></tr>
</table>

<u>Vibration</u>
Taking account of the distances to the works and notwithstanding ground conditions present, it is not anticipated that the vibration criteria outlined above will not be exceeded. However, it is recommended, precautionary vibration monitoring at the boundary with the nearest sensitive receptors is undertaken during construction (for vibration generating works).
</td></tr>
<tr><td>Air Quality</td><td><u>Communications</u>
▪ Develop and implement a stakeholder communications plan that includes community engagement before work commences on site;
▪ Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager/community liaison officer;
▪ Display the head or regional office contact information; and
▪ Develop and implement a Dust Management Plan (DMP), the final dust management plan will form part of the overall construction and environmental management plan which will formally be prepared by the appointed contractor(s) and submitted to Louth County Council post grant of planning permission.
<u>Site Management</u>
▪ Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;
▪ Make the complaints log available to the local authority when asked;
▪ Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book; and
▪ Hold regular liaison meetings with other high risk construction sites within 250m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are</td></tr>
</table>

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	minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes. Monitoring ▪ Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the Louth Council when asked; and ▪ Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. Preparing and Maintaining the site ▪ Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible; ▪ Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site; ▪ Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period; ▪ Avoid site runoff of water or mud; ▪ Keep site fencing, barriers and scaffolding clean using wet methods; ▪ Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below; and ▪ Cover, seed or fence stockpiles to prevent wind whipping. Operating Vehicle/Machinery and Sustainable Travel ▪ Ensure all vehicles switch off engines when stationary - no idling vehicles; ▪ Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable; and ▪ A speed restriction of 20 km/hr will be applied as an effective control measure for dust for on-site vehicles using unpaved haul roads. Operations ▪ Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems; ▪ Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate; ▪ Use enclosed chutes and conveyors and covered skips; Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; and Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. Waste Management ▪ Avoid bonfires and burning of waste materials. Measures Specific to Earthworks ▪ Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable; ▪ Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable; and ▪ Only remove the cover in small areas during work and not all at once. Measures Specific to Construction

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	▪ Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. <u>Measures Specific to Trackout</u> ▪ Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use; ▪ Avoid dry sweeping of large areas; ▪ Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport; ▪ Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable; ▪ Record all inspections of haul routes and any subsequent action in a site log book; ▪ Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned; ▪ Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable); ▪ Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits; and ▪ Access gates to be located at least 10 m from receptors, where possible.
Climate	▪ The following measures to reduce the embodied carbon of the construction works are: • Appointing a suitably competent contractor who will undertake waste audits detailing resource recovery best practice and identify materials can be reused/recycled. • Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods. • Ensure all plant and machinery are well maintained and inspected regularly. • Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site. • Sourcing materials locally where possible to reduce transport related CO_2 emissions. ▪ The project developer, Marina Quarter Ltd. (Glenveagh Properties), has committed to achieving Net Zero by 2050 across its whole business. Therefore, the proposed development will be built with carbon reduction and sustainability in mind and will include reductions of embodied emissions during the construction phase. ▪ A commitment to achieve a 55% reduction in Scope 3 (construction methods) emissions intensity (tCO_2e per 100 m^2 of complete floor area) by 2031 (using 2021 as the baseline year) will involve supplier engagement to make informed procurement decisions, engaging with subcontractors to support their transition to less carbon intensive fuels (diesel and gas oil is currently the norm) and investing in innovation of designing and building homes to reduce their associated embodied carbon. ▪ A reduction target of 46.2% by 2031 is also set in the plan for Scope 1 and 2 emissions (company operations). All targets have been validated by the Science Based Targets initiative (SBTi). ▪ the Contractor will be required to mitigate against the effects of extreme rainfall/flooding through site risk assessments and method statements. The Contractor will also be required to mitigate against the effects of extreme wind/storms, temperature extremes through site risk assessments and method statements. All materials used during construction will be accompanied by certified datasheets which will set out the limiting operating temperatures. Temperatures can affect the performance of some materials, and

Aspect	Construction and Demolition Mitigation
	this will require consideration during construction. During construction, the Contractor will be required to mitigate against the effects of fog, lighting and hail through site risk assessments and method statements. ▪ Throughout detailed design and construction phase, guidance documents to inform with design detail decisions shall be reviewed, e.g. the EU Commission *Technical Guidance on Adapting Buildings to Climate Change* (European Commission, 2021a), LETI emergency design guide (LETI, 2020), and the latest IPCC report.
Cultural Heritage	<u>Archaeology</u> ▪ A programme of archaeological testing, which will assess the remaining portions of the proposed development area and the route of the access road, will be carried out prior to the commencement of construction. The works will be undertaken by an archaeologist under licence to the National Monuments Service of the DoHLGH. Dependant on the results of the assessment, further mitigation may be required, such as preservation by record or in situ and/or archaeological monitoring. Any further mitigation will require approval from the DoHLGH. <u>Architecture</u> ▪ The section of boundary wall that bounds Blackrock Road will be subject to a photographic record prior to removal and the removal of the feature will be subject to archaeological monitoring. <u>Cultural Heritage</u> None

Table 5-3 Operational Phase Mitigation Measures

Aspect	Operational Mitigation
Population & Human Health	None
Landscape & Visual	▪ The proposed development includes for extensive landscape and open space works with the overall objective of providing a layout that ultimately integrates the development into the surrounding area; ▪ The planning application is accompanied by a Landscape Management and Maintenance Plan that sets out the objectives for management of the external hard and soft landscape elements of this site within the publicly accessible areas including the main open space and link road to Blackrock Road for a 20 year period. ▪ Landscape works will be undertaken by an ALCI approved landscape contractor and in accordance with BS 4428:1989 Code of practice for general landscape operations (excluding hard surfaces). Any trees or shrubs dying, damaged or removed will be replaced in the following planting session with plant of similar size and species. Trees supply and planting shall correspond to *BS 8545 Trees: from nursery to independence in the landscape - Recommendations*.
Material Assets: Traffic & Transport	▪ A Mobility Management Plan has also been prepared by SYSTRA and is included in the Transport Assessment (as part of the planning application submission), as a 'best practice' measure, to accompany the planning application. ▪ The aim of the Mobility Management Plan is to minimise the proportion of single occupancy vehicle trips and address the forecast transport impacts of the end-users of the subject site. These mobility measures will also support and enable those residents who may be living 'car-free' providing them with a range of sustainable mobility options and negating the need to own a car. These measures are primarily focussed on encouraging walking, cycling and the use of public transport and can be broadly summarised into the following groups: ○ Appointing a Mobility Manager. ○ Provision of a Welcome Travel Pack for residents. ○ Measures to encourage walking, such as the provision of clear signage and maps throughout the site. ○ Measures to encourage cycling, including the provision of bike hire hubs on the site, and the provision of cycling signage and maps, showing cycle times to key destinations. ○ Measures to encourage Public Transport use, including liaising with local bus operators regarding bus scheduling, routes and school travel. ▪ The development is designed to complement and support future transport initiatives such as the Blackrock to Dundalk Greenway, the NTA's Cycle Connects Scheme and the NTA's Rural Mobility Plan. ▪ A Mobility Manager will be appointed from within the management company to ensure the implementation and monitoring of the Mobility Management Plan. They will act as a point of contact for residents for all mobility and access related issues.
Material Assets: Built Services	▪ Surface Water runoff from the proposed development will be managed in accordance with the requirements of the Greater Dublin Strategic Drainage Study (GDSDS), CIRIA SuDS and the requirements of the Louth County Council Water Services Department (LCC WSD). The Surface Water management proposals shall serve to reduce the overall impact of the proposed development on the existing environment. The features to be maintained include all SuDS features. ▪ Uisce Éireann shall implement an operational inspection and maintenance regime to ensure the system keeps operating within the design specifications.

Aspect	Operational Mitigation
	▪ The proposed Water Supply system shall be commissioned and subject to a, as a minimum, monthly operational inspection and maintenance regime to ensure the system keeps operating within the design specifications. ▪ The proposed electricity supply system shall be commissioned and subject to a regular operational inspection and maintenance regime, in accordance with the Utility providers procedures, to ensure the system keeps operating within the design specifications. ▪ The proposed telecommunications system shall be commissioned and subject to a regular operational inspection and maintenance regime, in accordance with the Utility providers procedures, to ensure the system keeps operating within the design specifications.
Material Assets: Waste	▪ An Operational Waste Management Plan has been prepared by DOBA (2025) for the proposed development. A waste strategy is presented in the OWMP which considers legal requirements, policies, and best management guidelines. This plan also demonstrates that the Waste Storage Area (WSA) has been incorporated within the design of the proposed development. Implementation of the OWMP will ensure a high level of recycling, reuse, and recovery at the proposed development during the Operational Phase. All materials that are considered recyclable will be segregated and separated at source to reduce costs from the waste collector and ensure maximum diversion of material from landfill. The waste strategy presented in the OWMP will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated WSA will provide sufficient room for the required receptacles in accordance with the details of this strategy. ▪ Residents will be required to separate waste into the main following streams and place the same in bins provided: - MNR (mixed non-recyclables); - DMR (dry-mixed recyclables); and - OW (organic waste). ▪ Each bin will be labelled clearly and will be colour coded to avoid cross-contamination. The types of wastes permitted in each bin will be clearly posted within the bin store above the bins. Restricted access will be given to the bin store with only residents of the proposed development permitted access via a code/electronic fob. Infrequently generated waste such as textiles/furniture/WEEE will be stored on a temporary basis within the resident's unit and disposed of appropriately. ▪ As outlined in the OWMP, it is intended to ensure that the highest possible levels of waste reduction, waste reuse and waste recycling are achieved for the proposed development. Specifically, the OWMP will aim to achieve waste prevention, maximum recycling and recovery of waste with a focus on diversion of waste from landfill wherever possible. The management company will be responsible for the provision of a leaflet to all new tenants encouraging good waste segregation and pictorial information detailing the waste streams that can be placed in each bin. In addition to this, clauses that support waste segregation targets will be included in relevant legal documentation e.g., tenancy agreements where possible. The OWMP also states that the facilities management company must employ suitably permitted or licenced contractors to undertake off-site management of their waste in accordance with all legal requirements. This includes the requirement that a waste contractor handle, transport and reuse / recover / recycle / dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

Aspect	Operational Mitigation
	▪ The OWMP has reviewed policy alongside best practice guidance and recommendations for sustainable waste and recycling management arrangements for the proposed development and ensures a high level of recycling, reuse and recovery at the development and also ensures that waste management is carried out in accordance with the requirements of the Louth County Council Development Plan 2021-2027 and Ireland's National Waste Policy.
Land & Soils	None
Water & Hydrology	None
Biodiversity	None
Noise & Vibration	Noise None Vibration None
Air Quality	None
Climate	None
Cultural Heritage	None

Table 5-4 Construction & Demolition Monitoring

Aspect	Construction & Demolition Monitoring
Population & Human Health	None
Landscape & Visual	None
Material Assets: Traffic & Transport	▪ No specific monitoring measures over and above expected normal construction and operational practices for such a development are proposed for the construction phase.
Material Assets: Built Services	▪ During the construction of the Surface Water drainage, the system shall be inspected and monitored for compliance with the design and relevant Louth Co. Co. and GDSDS standards in accordance with the Preliminary Inspection Plan. The requisite air and pressure testing shall be carried out on all sewer installations during construction while exfiltration testing shall be carried out on all manholes. Records of these tests shall be maintained by the Contractor. The connection to the existing open water course will not be made until all the works are complete within each Phase, and temporary surface water management will remain in place until this time to ensure only clean, uncontaminated surface water is discharged to the existing open water course. ▪ During the construction of the Wastewater drainage, the system shall be inspected, tested and monitored in accordance with the requirements of the relevant Uisce Éireann Wastewater Code of Practice (IW-CDS-5030-03). Records of these tests shall be maintained by the Contractor as required and shall be witnessed by Uisce Éireann in accordance with the relevant Quality Procedures. The connection to the existing Wastewater network will not be made until all the works are complete within each Phase, and temporary Wastewater management associated with the Contractor's compound will remain in place until this time. ▪ During the construction of the water supply network, the system shall be inspected, tested and monitored in accordance with the requirements of the relevant Uisce Éireann Code of Practice. Records of these tests shall be maintained by the Contractor as required and shall be witnessed by Uisce Éireann in accordance with the relevant Quality Procedures. The connection to the existing water supply network will not be made until all the works are complete within each Phase and temporary water connection associated with the Contractor's compound will remain in place until this time. ▪ The ESB shall monitor the existing and proposed networks during the diversion and undergrounding of the existing over-head 20kV and 38kV powerlines. The ESB shall carry out ongoing testing and commissioning of the installed infrastructure during construction. ▪ The incoming telecommunications provider shall monitor the existing and proposed networks during the installation of the proposed telecommunications network throughout the site during construction. The incoming telecommunications provider shall carry out ongoing testing and commissioning of the installed infrastructure during construction.
Material Assets: Waste	▪ Regular waste audits will be carried out in accordance with the Contractor's Project Specific Waste Audit Plan to monitor the quantity and type of waste produced by different Sub-Contractors and identify opportunities for Waste reduction throughout each stage of the project. ▪ The Audit should identify details of raw material inputs and the quantity, type and composition of all Waste from the site. The Contractor will record the quantity in

Aspect	Construction & Demolition Monitoring
	tonnes and types of Waste and materials leaving the site during the works. The name, address and authorisation details of all facilities and locations to which waste and materials are delivered will be recorded along with the quantity of Waste in tonnes delivered to each facility. Records will show material which is recovered and disposed of. ▪ The Audit shall highlight corrective actions that may be taken in relation to management policies or site practice in order to bring about further waste reductions which shall be supplemented with a tracking system to determine the success or failure of the corrective actions. ▪ Summary audit reports outlining types, quantities of Waste arising's and their final treatment method should be sent to the relevant Authority for their information.
Land & Soils	▪ Routine monitoring and inspections during refuelling, concrete works to ensure no impacts and compliance with avoidance, remedial and mitigation measures. ▪ Inspections and monitoring will be undertaken during excavations and other groundworks to ensure that measures that are protective of water quality are fully implemented and effective. ▪ The appointed contractor will employ a suitably qualified person to monitor excavations in made ground to ensure that any contaminated material is identified, segregated and disposed of appropriately. The appointed contractor will monitor excavations to ensure consistency with the descriptions and classifications according to waste acceptance criteria testing carried out as part of the site investigations. ▪ A dust deposition monitoring programme will be implemented during the construction phase in order to verify the continued compliance with relevant standards and limits. The appointed contractor will undertake dust monitoring at a range of nearest sensitive receptors during the construction phase of the Proposed Development with the Technical Instructions on Air Quality Control (TA Luft) dust deposition limit set at 350 mg/m2/day, averaged over one year and applied as a 30-day average. ▪ Materials management and waste audits will be carried out at regular intervals to monitor the following: o Management of soils onsite and for removal offsite. o Record keeping. o Traceability of all materials, surplus soil and other waste removed from the site; and o Ensure records are maintained of material acceptance at the end destination
Water & Hydrology	▪ Inspections will be undertaken during excavations and other groundworks to ensure that measures that are protective of water quality are fully implemented and effective. ▪ Discharges to surface water / foul sewers will be monitored where required in accordance with statutory consents (i.e., discharge licence). ▪ Routine monitoring and inspections will be undertaken by the main contractor or appointed delegate during refuelling, concrete works to ensure no impacts and compliance with avoidance, remedial and mitigation measures. ▪ Surface water samples will be collected at the commencement of works to establish the baseline scenario. The monitoring locations will be agreed with LCC in advance of works commencing. ▪ Visual inspection and water samples of the watercourse will be undertaken daily to ensure no sediment/pollutant deposits are evident.

Aspect	Construction & Demolition Monitoring
	▪ Water samples will be taken once a month during the construction phase to demonstrate compliance with surface water regulation EQS standards. The monitoring locations will be agreed with LCC in advance of works commencing. ▪ The proposed surface water monitoring suite will include the following parameters: pH, electrical conductivity, total suspended solids, Total Petroleum Hydrocarbons, nitrate, ammonia, and COD. However, the final suite of analysis will be agreed with LCC in advance of works commencing
Biodiversity	▪ A suitably qualified ecologist will act as Ecological Clerk of Works (ECoW) and carry out the pre-construction surveys for KER species at the Site and work closely with the Site manager to ensure these species are protected for the duration of the works. ▪ A watching brief will be kept by the ECoW for the duration of the works for the presence of KER species that might be present at the Site ▪ Dust control measures will be checked on a weekly basis, and more often during dry weather, to ensure they remain effective. The R172 and its grassy verge located east of the main Site area will be checked for any potential dust impacts, and the dust control measures reviewed if impacts are noted. ▪ Surface water and groundwater protection measures (as described in Section 11.9.3.1) will be checked weekly to ensure they remain effective, and more often during moderate to heavy rainfall events as appropriate. ▪ The results of the above monitoring be made available to Louth CoCo on request and any remedial measures that are required based on the results of same will be agreed with the same if required.
Noise & Vibration	▪ Construction noise monitoring should be undertaken at periodic sample periods on the boundary with the nearest noise sensitive receptors. ▪ Noise monitoring should be conducted in accordance with the *International Standard ISO 1996: 2017: Acoustics – Description, measurement and assessment of environmental noise*. ▪ Vibration monitors should be considered during the substructure phase of the development between the site and NSL 1/NSL2 as these are closest vibration sensitive locations on the boundary of the site. ▪ The Vibration monitoring stations should continually log vibration levels using the Peak Particle Velocity parameter (PPV, mm/s) in the X, Y and Z directions, in accordance with *BS ISO 4866: 2010: Mechanical vibration and shock – Vibration of fixed structures – Guidelines for the measurement of vibrations and evaluation of their effects on structures.* ▪ The recommended vibration limits to avoid cosmetic damage to buildings, as set out in: ○ British Standard BS7385: 1993: Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration, and; ○ British Standard BS5228-2: 2009 + A1: 2014: Code of practice for noise and vibration control on construction and open sites – Vibration.
Air Quality	▪ Monitoring of dust can be carried out by using the Bergerhoff Method. This involves placing Bergerhoff Dust Deposit Gauges at a strategic locations along the site boundaries for a period of 30 +/- 2 days. The selection of sampling point locations should be carried out in consideration of the requirements of VDI 2119 with respect to the location of the samplers relative to buildings and other obstructions, height above ground, and sample collection and analysis procedures. After the exposure period is complete, the Gauges should be removed from the site; the dust deposits

Aspect	Construction & Demolition Monitoring
	in each Gauge will then be determined gravimetrically and expressed as a dust deposition rate in mg/m2/day in accordance with the relevant standard
Climate	None
Cultural Heritage	▪ The mitigation measures detailed above would also function as a monitoring system to allow the further assessment of the scale of the predicted effects and the effectiveness of the mitigation measures.

Table 5-5 Operational Monitoring

Aspect	Operational Monitoring
Population & Human Health	None
Landscape & Visual	▪ Regular monitoring will be undertaken to determine success of landscape operations and ensure they are behaving in the manner anticipated at design stage. If required, elements of the design can be adapted to accommodate changes required by actual field experience. This would equate to a Negligible and Neutral effect.
Material Assets: Traffic & Transport	None
Material Assets: Built Services	None
Material Assets: Waste	▪ The building management company and future residents will be required to maintain the bins and storage areas in good condition. The waste strategy presented in the OWMP will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated areas for waste storage will provide sufficient room for the required receptacles in accordance with the details of this strategy.
Land & Soils	None
Water & Hydrology	▪ Ongoing regular operational monitoring and maintenance of drainage and the SuDS measures will be incorporated into the overall management strategy for the Proposed Development. This will ensure that there are no impacts on water quality and quantity (flow regime) during the operational phase of the Proposed Development. ▪ In addition, surface water quality monitoring will be undertaken at the outlet to the existing public surface water sewer biannually (twice a year) for a period of 2 years following completion of the construction phase of the Proposed Development in order to ensure that the discharge is meeting all the relevant EQS limits. The suite of analysis will be agreed with LCC in advance
Biodiversity	▪ A post construction check of the proposed public lighting will be carried out by a suitably qualified bat ecologist once the development is complete; to ensure that it is operating effectively and that impacts to bats through operational lighting at the Proposed Development are minimised and embedded mitigation has been successful. Where necessary the bat ecologist will make recommendations to address any problem areas for bats and lighting. The bat ecologist will furnish the Biodiversity officer/Parks Department of Louth CoCo with a report detailing the survey results and mitigation installed once complete. ▪ The standard necessary maintenance checks will be carried out to ensure all SUDS measures and the wastewater pumping station are operating correctly. ▪ A Biodiversity Monitoring Plan will be prepared by a suitably qualified Ecologist that will cover the post-construction monitoring of the efficacy of the proposed enhancement measures e.g., bird and bat boxes, hibernacula log-piles, naturally seeded wildflower meadows, low-intervention hedgerow management. ▪ Bird and bat boxes will be inspected annually for a period of 3 years as part of the BMP to assess whether these measures have been adopted by their respective species groups and for damage.
Noise & Vibration	None
Air Quality	None

Aspect	Operational Monitoring
Climate	None
Cultural Heritage	None