

1.0 NON-TECHNICAL SUMMARY

1.1 Introduction

The requirement for an Environmental Impact Assessment Report to contain a non-technical summary under Article 5 (1) (e) and Annex IV of the 2014 EIA Directive has been transposed into Irish Law by way of Article 94 (c) of the Planning and Development Regulations 2001 (as amended). The non-technical summary fulfils one of the fundamental objectives of the EIAR process, which is to ensure that the public are made aware of the environmental implications of any decisions about whether to allow new projects to take place¹.

According to Guidelines, the non-technical summary should be concise and comprehensive and should be written in language easily understood by a lay member of the public not having a background in environmental matters or an in-depth knowledge of the proposed project².

1.2 Description of Location

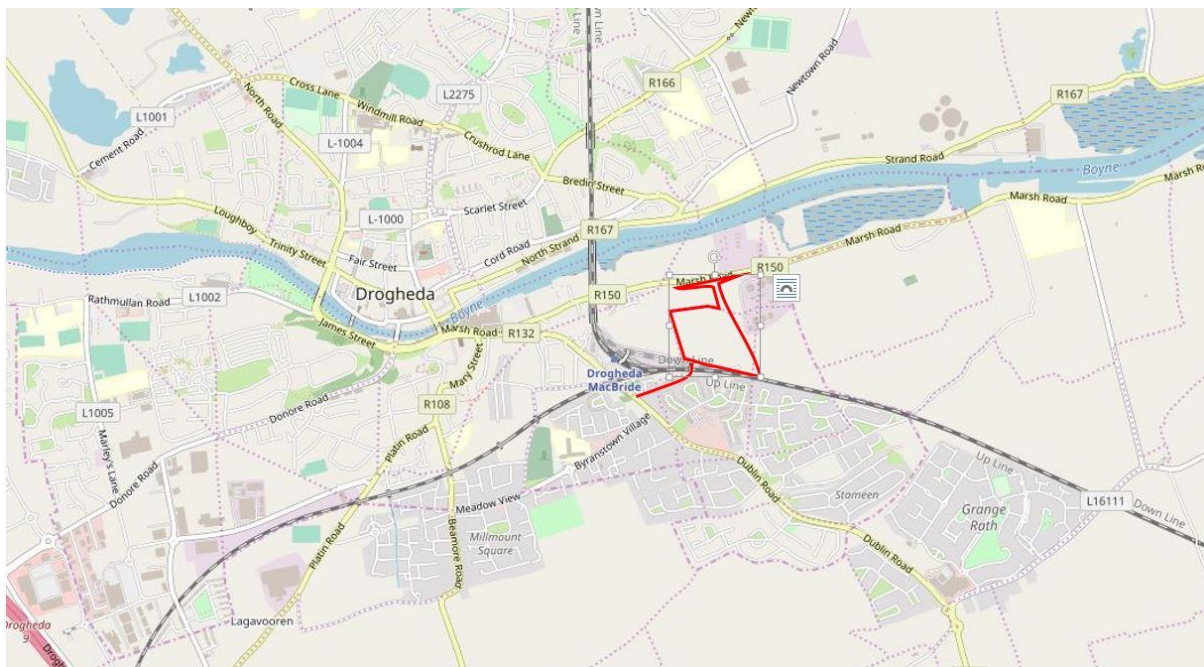


Figure 1.1 Site Location

The application site is located to the north of the Belfast-Dublin railway line and to the south of Marsh Road (R150) to the east of Drogheda Town Centre. The Drogheda Waste Water Treatment Facility lies to the east while lands to the immediate north and west whilst zoned are undeveloped. Between the southern site boundary and the railway line McGrath's Lane provides a connection to the Dublin Road (R132) via Railway Terrace. The existing housing development of Wheaton Hall lies to the south of the railway line. Flogas to the north of Marsh Road is identified as a Seveso site.

¹ Para. 4.6, EPA, 2017

² Guidelines for Planning Authorities and An Bord Pleanála, August 2018

The most distinctive feature of the site is its topography and the sharp fall in levels that occurs between the northern and southern boundaries. The site is currently in agricultural use and contains no buildings. ESB power lines transverse the site.

1.3 Description of the project

A detailed description of the proposed project is contained within Chapter 3. This following summary highlights the main elements of the proposal-

- 450no. residential units
 - 81no. houses
 - 24no. duplex
 - 345no. apartments
- 1,277.8sq.m neighbourhood use floor space in 8no. units
- 1,902.8sq.m office floor space
- 919.8sq.m Crèche suitable for up to 120 children
- 15,905sq.m public open space

An access road was previously permitted under P.A. Ref. 17/387 together with 133no. houses to the south east of the application site. The access road has funding under the Local Infrastructure Housing Activation Fund (LIHAF) and is at an advanced stage of design. This access road is included within the application site boundary and forms part of the proposed project as is McGrath's Lane/Railway Terrace where upgrade works are proposed. Vehicular access to the site is via Marsh Road with pedestrian/cyclist access only via Railway Terrace/McGrath's Lane.

1.4 Description of the Receiving Environment - Baseline

In order to gain an informed understanding of the receiving environment, the applicant commissioned the following studies prior to considering the layout and built form-

- Topographical survey
- Appropriate assessment screening
- Archaeological desktop assessment
- Landscape and Visual assessment
- Tree survey
- Hedgerow survey
- COMAH Land Use Planning Report/risk modelling³ of the Flogas site nearby which is a Seveso site

Following Stage 1 Consultation, it was considered necessary to move to Stage 2 Appropriate Assessment and a Natural Impact Assessment accompanies this SHD application.

³ Undertaken in accordance with completed in accordance with the Policy and Approach of the Health and Safety Authority to COMAH Risk-based Land-use Planning, 2010

The baseline scenario for each environmental factor assessed as part of the environmental impact assessment of the proposed project is contained within each chapter of this EiAR. The baseline scenario refers to the current environmental factors in the absence of the project. The environment will change over time, even without the introduction of the proposed project.

1.5 The 'Do-nothing' Scenario

The 'do nothing' scenario or 'no Project' Alternative describes what would happen should the Project not be implemented at all. The 'Do-nothing' scenario is examined in relation to each environmental factor. It is submitted that there is identified need for the proposed project and as such the 'do-nothing' scenario would not be desirable. The application site is zoned and serviceable with residential development permitted to the east and an access road that is both permitted and funded under LIHAF. The project will have positive benefits to the community and is in keeping with National, Regional and Local Planning Policy.

1.6 Description of Reasonable Alternatives

The proposed project has been considered in terms of –

- Alternative Locations
- Alternative Uses
- Alternative Design and Layout

The main reasons for the chosen option are as follows-

- The proposed layout is considered the most practical and feasible having regard to site constraints, and limited alternative layout(s) options due to the permitted route of the access road (P.A. Ref. 17/387).
- The mix of uses proposed is fully compliant with the zoning objective for the application site and will assist in the creation of a new neighbourhood.
- The proposed development compliments development already permitted to the south east under P.A. Ref. 17/387.
- The location of the office building and crèche and the north of the site are well located relative to future development of the employment lands to the north of the application site.
- The proposed residential development will secure funding that has been awarded under LIHAF for the access road– the provision of a total of 260 dwellings by 2021.
- Careful consideration has been given to ensure the areas of public open space provided are of appropriate size, and located in areas which benefit from passive surveillance.
- The proposal will result in the improvement of McGraths Lane/Railway Terrace.

- The layout proposed will achieve a density of 62 dwellings per hectare across the site. Lower density housing is proposed adjacent to existing housing on McGraths Lane with higher density to the centre and north of the site.
- The proposal provides a range of designs with different house types ranging from one bed to three bed along with apartments. The wide range of dwelling sizes and types will ensure the development is able to cater for a variety of family types from different socio-economic groups.
- The landscape rationale takes full account of existing hedgerows and trees and will introduce pollinator friendly planting.
- The application site boundary includes the LIHAF funded access road permitted under P.A. Ref. 17/387 and works proposed to McGraths Lane to ensure a comprehensive development is delivered. The phasing plan ensures delivery of a mix of uses across the site and the timely completion of the pedestrian access and open space areas for residents.

1.7 A Non-Technical Summary of the factors likely to be significantly affected by the project

1.7.1 Population and Human Health

Chapter 4 of this EiAR contains the assessment of the proposed development under following topics and the potential of significant impacts that are likely to affect the environmental factor of population and human health-

- Land use and settlement patterns
- Population and housing supply
- Employment
- Community infrastructure capacity
- Human health and wellbeing

1.7.1.1 Baseline

Land Use and Settlement Patterns: The area in which the application site is located is semi-urban in character with residential development to the North West and south of the train line and two properties close to the site on McGrath's Lane. The area features large scale infrastructure in the form of the Flogas LPG plant to the north of Marsh Road, the Drogheda Wastewater Treatment Plant to the north east of the site and the railway line which lies to the south of the site with associated regional service building.

Population and Housing Supply: The baseline in relation to each of the above topics is discussed in detail within chapter 4. In summary, Drogheda has shown strong population growth and is predicted to be a key growth centre in the region with the target to achieve a population of 50,000 by 2031. The current supply of housing within the County has not achieved the level of provision required by the County Development Plan and Drogheda has been identified as a Rent Pressure Zone demonstrating a pent up demand.

Employment: Drogheda has a diverse working population with the majority occupying managerial and technical level positions. Census data shows there to be a negative commuter flow for the town with more workers leaving than arriving to work in the town.

Community Infrastructure Capacity: The area in which the site is located is well served by public transport as is Drogheda town. However, Census data shows that a low percentage currently use the train as their mode of transport to school or work. An audit of community services and amenities details a host of existing facilities available. These are identified, specified and mapped at Chapter 4 of the EiAR.

Human Health and Wellbeing: The population of Drogheda and of the ED in which the site is located are generally of 'very good' health and have access to a high level of health services including Our Lady of Lourdes Hospital, Doctors Surgeries and Clinics and community pharmacies.

1.7.1.2 A description of the likely significant effects of the project on the environment

Land Use and Settlement Patterns: The proposed development will change agricultural lands into a new neighbourhood with 450 residential dwellings and supporting neighbourhood and employment uses. These lands are zoned for the uses proposed and are considered to be in keeping with the evolution of the area. Planning permission has been granted for 133no. houses to the south west of the application site with an access road also granted permission that has been awarded funding under LIHAF in recognition of the strategic location. The lands are located in close proximity to the Drogheda Train Station and Town Centre and contiguous to the urban area. It is concluded that the proposed development will have a positive impact on the settlement pattern as it will avoid further leapfrogging of development to the suburbs and meets with the zoning objective for the Drogheda Transport and Development Area. It will also assist with the RSES objective to achieve 30% of new housing development within the urban area.

Population and Housing Supply: The proposed development will supply much needed residential accommodation in a sustainable location and provides supporting neighbourhood and employment uses. The additional potential residential population of 1,260 will assist in the delivery of additional service and support transport improvements including the DART extension. As such it will have a positive impact on the population and housing supply of Drogheda.

Employment: The proposed development will not only offer employment opportunities but they will be in close proximity to people's homes and the Drogheda Train Station. Again, this is a positive impact.

Community Infrastructure Capacity: It is recognised that there are many services and facilities in the immediate area and Drogheda Town Centre for future residents to avail of including schools both primary and secondary. The proposed development includes the provision of a childcare facility and contains a high level of public open space including a natural playground. The overall impact is positive.

Human Health and Wellbeing: The proposed development has undergone EIA. In addition, assessments have been undertaken of the inward impact of potential noise pollution, odour as well as daylight, sunlight and overshadowing to fully assess the proposal in terms of the potential impact on the health and wellbeing of existing and future residents. It is submitted that the proposed development, including improvements to McGraths Lane/Railway Terraced will improve safety and cause no harm to human health.

1.7.1.3 A description of the forecasting methods or evidence used

The assessment of the potential significant impacts of the proposed development on population and human health was informed by published reference documents including the Central Statistics Office Census data, Pobal online services, the National Planning Framework, the Regional Spatial and Economic Strategy for the Eastern and Midland Region as well as the Louth County Development Plan 2015 and the Drogheda Borough Council Development Plan 2011 (as extended).

1.7.1.4 Mitigation measures & residual effects

None predicted or required.

1.7.1.5 Difficulties Encountered

None

1.7.2 Biodiversity

Chapter 5 - A review of the biodiversity of the site was carried out by OPENFIELD Ecological Services and this included a study of existing information from the area and a site survey. A site survey was carried out in May 2018. May is within the optimal season for general habitat survey and for surveying breeding birds. The author of this chapter undertook a Stage 2 Appropriate Assessment and a Natura Impact Statement accompanies this planning application under separate cover. Please refer to the NIS for mitigation relating to the protection of the Natura network and possible hydrological links.

It was found that the site is not within or adjacent to any area that is designated for nature conservation at a national or international level. There are no plants recorded from the site that are listed as rare or of conservation value. There are no habitats that are examples of those listed on Annex I of the Habitats Directive. No plant species are present which is listed as an alien invasive plant species as listed on Schedule 3 of SI No. 477 of 2011. The site can be described as arable crops with a small area of scrub. A treeline along the north-western boundary, along with native hedgerows elsewhere are of high local value to biodiversity. Along one stretch of hedgerow this is accompanied by a drainage ditch. The site contains suitable roost locations for Bats and they are likely to use the area for foraging and/or commuting. This EIAR is accompanied by a Bat Survey Report. There was no evidence of Badgers using the site.

Approximately 625m of hedgerow are to be removed (~60% of the total) while the high-value treeline is to be retained. Additional landscaping will compensate for the loss of habitat that will occur. With the suggested

mitigation in place, the ecological impacts by this proposed development will not be significant. The potential for significant impacts on Natura 2000 sites can be ruled out (please refer to Natura Impact Assessment under separate cover).

1.7.3 Land, Soils, Geology and Hydrology

Chapter 6 by AWN Consulting assesses and evaluates the potential impacts of the proposed development on the geological and hydrogeological environment. The Geological Survey of Ireland (GSI) geological web viewer shows the site is underlain by >10 metres of low permeability soil. This was confirmed by 2 no. onsite investigations undertaken at the site in May/June 2018 and February 2018.

The subsoil has been classified as mostly low permeability Irish sea tills from Lower Palaeozoic shale and sandstones (IrSTLPSsS) and the site is underlain by c. >10 m of this material. This aids in the protection of the Locally Important (Lm) underlying aquifer which has a low vulnerability as categorised by the GSI. The bedrock is primarily limestone and is part of the Mornington formation.

Currently, the EPA (2018) classifies the Drogheda GWB, a WFD risk as currently “under review” meaning there is insufficient information to determine the risk, or measures for enhancement have been implemented but some additional monitoring is required to confirm expected improvements have been achieved. However, the GWBs to the north and south of this have are currently at risk of not achieving good status. The Ground Waterbody WFD Status 2010-2015 was recorded as “Good”.

Based on the NRA methodology (2009) (See Appendix 6.2), criteria for rating site importance of geological features, the importance of the bedrock and soil features at this site is rated as low importance with medium quality significance or value on a local scale. There are no extractable minerals or areas of geological heritage and the soils are suitable for agricultural use but are typical of surrounding agricultural land.

Based on the NRA/IGI criteria for rating the importance of hydrogeological features (refer to Appendix 5.1), the importance of the hydrogeological features at this site is rated as *Low to Medium Importance*. This is based on the assessment that the attribute has a medium quality significance or value on a local scale. The aquifer beneath the site is a *locally important* (Lm) bedrock aquifer to *Bedrock which is Generally Moderately productive*. It is not used for public water supply or widely used for potable use and is well protected (low vulnerability). In addition, it does not host any groundwater dependent ecosystems (SACs/NHAs).

The Conceptual site model is as follows;

- The profile on site comprises thin topsoil overlying > 10 m of sandy gravelly CLAY with cobbles and boulders underlain by (Firm) sandy slightly gravelly CLAY with fine to coarse gravels and occasional coarse sand horizons (1-2m) separating the two layers of clay in some locations. The overburden overlays a dark limestone and shale bedrock.

- Depth to bedrock is believed to be >10m across the site, all boreholes were installed to 10 mbgl during site investigations with none identifying bedrock. Consultation with the GSI well card index indicated a nearby well was installed in bedrock at 16.5m.
- The topography of the proposed development site generally slopes from south to north, approximately +32mAOD at the south western boundary to approximately +21.5mAOD at the northern boundary of the site.
- No continuous perched water table was identified within the overburden. Localised seepage was encountered within the overburden in a number of trial pits (TP2, TP3, TP4, TP6 & TP8) at depths ranging between 1.50m and 3m. The limestone and shale bedrock is likely to have shallow perched water along the weathered surface. Development of the site will not require any significant dewatering considering the depth to the bedrock aquifer and the prevalence of >10m of low permeability clays.
- A basement/undercroft car parks form part of the proposed works. The final floor level of the basement will be between 15.80 mAOD and 26.75 mAOD (Malin). The current ground level of the area where the basement car park is proposed is c.24 mAOD. Bedrock is believed to be >10 mbgl. Removal of bedrock should not be necessary for excavation and construction of the underground carpark.
- Review of the hydrogeology and geology in the surrounding region indicates that there are no groundwater source protection area in the vicinity of the site. There are a number of Special Protected Area and Special Areas of Conservation to the north and east of the proposed. Please refer to Chapter 5 Biodiversity and NIS that accompanies this planning application. There are no sensitive receptors such as groundwater-fed wetlands, Council Water Supplies/ Group Water Schemes or geological heritage sites which could be impacted by this development.
- No evidence of the disposal of waste material was identified at the area proposed for excavation.

The potential impacts of construction and mitigation measures proposed have been identified and will be included in the Construction Environmental Management Plan (CEMP) for the proposed development as part of the detailed Construction Management Plan completed on appointment of the main contractor.

The mitigation measures incorporated in the project design address potential impacts which include:

- Excavation & Infilling;
- Fuel and chemical handling, transport and storage; and
- Control of water during construction.

Excavation and infilling within the proposed site will be required as part of the preliminary site enabling works as well the levelling and excavation of the site to render it suitable for development. Excavated material will be reused on site for infilling and landscaping works where possible. Site investigation and laboratory analysis has not identified any existing contamination. However, if contaminated soil/water is encountered, it will be required to be removed by a licensed waste contractor. This development will also require importation of clean fill.

During construction of the development, there is a risk of accidental pollution incidences from the following sources:

- spillage or leakage of temporary oils and fuels stored on site;
- spillage or leakage of oils and fuels from construction machinery or site vehicles;
- spillage of oil or fuel from refuelling machinery on site; and
- run-off from concrete and cement works

There will be no direct discharges to the ground or abstractions from the aquifer during the operation of the development. The potential impacts of the development operation in relation to land soils and environment have been assessed under the following headings:

- Accidental Emissions
- Reduction in Local Recharge to Groundwater

Construction works will require the removal of soils/stones. The aquifer vulnerability is classified as 'Low' throughout the site area based on site investigations. Removal of soil cover will increase the vulnerability of the underlying bedrock during construction however, due to the thickness of the overburden and the fact that a large proportion of the site will be capped/paved this will provide protection from surface infiltration during operation.

Surface water management in accordance with the design (e.g. runoff directed to attenuation storage and through a petrol interceptor prior to discharge) will ensure there is no risk to the underlying aquifer. Temporary storage of soil will be carefully managed to prevent any potential negative impact on the receiving environment. This material will be stored away from the surface water drainage network. Movement of material will be minimised in order to reduce degradation of soil structure and generation of dust.

Although there is no evidence of contamination at the site, all excavated materials will be visually assessed for signs of possible contamination such as staining or strong odours. In the event that any unusual staining or odour is noticed, samples of this soil will be analysed for the presence of possible contaminants in order to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated, classified and appropriately disposed of by a suitably permitted/licensed waste disposal contractor.

To minimise any impact on the underlying subsurface strata from material spillages it is proposed that all fuels, oils, solvents and paints used during construction will be stored within temporary bunded areas or will be contained in double skinned tanks in designated areas of the site away from surface water drains.

Re-fuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place off site or in a designated area that will be away from any existing surface water drains. The area will be determined by the contractor prior to commencement on site but is likely to be carried out in a designated area of the contractor's compound. In the event of a machine requiring refuelling outside of this area, fuel will be transported in a mobile double skinned tank. An adequate supply of spill kits and hydrocarbon adsorbent packs will be stored in this area. All relevant personnel will be fully trained in the use of this equipment. Guidelines

such as “*Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors*” (CIRIA 532, 2001) will be complied with.

There will be no bulk storage of fuel required for the operation of the proposed residential development. The majority of the site c. (c.60%) will be covered in hardstanding. The impermeable surface will minimise the potential influx of any contaminants into soils and underlying groundwater.

Any accidental leaks from cars within the car parking/road areas will be directed through the surface drainage system via an appropriately sized interceptor.

Attenuation will be provided by underground tanks to ensure that the discharge rate is maintained at greenfield runoff rate. The attenuation facility will accommodate rainfall events up to, and including, the 1-in-100-year storm event.

The foul water system discharges to the public sewer and subsequently to the Drogheda WWTP to the east of the proposed site. Due to the close proximity of the WWTP, there is a very low risk of contamination to ground from leakage from the foul drainage system.

Following implementation of mitigation measures detailed in Chapter 6 of the EIA Report, the predicted impact during construction of the proposed development will be **short-term, imperceptible** and **neutral**.

Following implementation of the mitigation measures proposed in Section 6.5, the predicted impact on land, soils and geology once the development is constructed and operational (in accordance with EPA Draft EIA Guidelines, 2017) is considered to be **long-term, imperceptible** with a **neutral** effect on quality.

There will be no emissions to ground or the underlying aquifer from operational activities.

The predicted impact during operation of the proposed development, following implementation of mitigation measures detailed in Chapter 6 of the EIA Report will be **long-term, imperceptible** and **neutral**. Following the NRA criteria for rating the magnitude and significance of impacts on geological and hydrogeological related attributes, the magnitude of impact is considered **Negligible**.

1.7.4 Hydrology

Chapter 7 by AWN Consulting assesses and evaluates the potential impacts of the proposed development on the surrounding water & hydrological environment. The River Boyne estuary is located c. 540m to the north of the proposed site with the Stagrennan Stream located c. 1.1 km to the south and flows easterly before entering the Boyne Estuary 2 km to the north east. The proposed site is not within the catchment of any significant river. There is one drainage ditch to the south of the proposed site identified in Chapter 5 *Biodiversity* and unlikely to support significant fish life and is unsuitable for migratory salmonid species. There are no sensitive fisheries habitats downstream as the River Boyne in this location is tidal in nature.

There are no EPA quality monitoring points along the Stagrennan Stream (only observational). The estuary of the Boyne was assessed as of 'intermediate' water quality and 'moderate' for the most recent WFD monitoring period (2010-2015). Currently, the EPA (2019) classifies the Water Framework Directive risk of the Boyne Estuary as '*At risk of not achieving good status*'.

Based on the NRA methodology (refer to Appendix 7.1), for the criteria for rating the importance of hydrological features, the features at this site are rated as **Medium Importance**. This is based on the fact that the Stagrennan Stream is not used locally as an amenity site both it and the Boyne Estuary do not supply potable water to homes falling within the criteria of "*Local potable water source supplying <50 homes Quality Class D*". The site may be hydrologically linked to the Boyne Estuary SPA 2km down river, to the north east. A Natura Impact Statement has been prepared and accompanies this application under separate cover.

A Flood Risk Assessment has been prepared by Waterman Moylan Engineers. This Flood Risk Assessment has been carried out in accordance with the *DEHLG/OPW Guidelines on the Planning Process and Flood Risk Management* published in November 2009. The assessment identified no flood hazards for the proposed development from coastal or fluvial flooding. The development resides within Flood Zone C and is not at risk of flooding from a 1% or 0.1% Annual Exceedance Potential (AEP) event.

The potential impacts of construction and mitigation measures proposed have been identified and will be included in the CMP for the proposed development. The mitigation measures incorporated in the project design address potential impacts which include:

- Excavation of soil for levelling, Infilling and landscaping will be undertaken.
- Temporary storage/use of fuel/oils on site will be required for construction machinery.
- Infilling of the drainage ditch to the south of the proposed site.

During the construction phase at this site there is potential for an increase in run-off due to the introduction of impermeable surfaces and the compaction of soils. The potential impact of this is a possible increase in surface water run-off and sediment loading which could potentially impact local drainage. Mitigation measures relating to surface water and potential impact on Natura sites are contained in the NIS.

Run-off water containing silt will be contained on site and treated to ensure adequate silt removal. Silt reduction measures on site will include a combination of silt fencing, settlement measures (silt traps, silt sacks and settlement tanks/ponds). Temporary storage of soil will be carefully managed with excavations remaining open for as little time as possible and weather conditions will be considered when planning construction activities.

The proposed development will require site preparation, excavations and levelling for foundations, car parks and access roads, for the installation of services and landscaping. The drainage ditch located to the south of the site will be Infilled as a first measure during construction. Excavations will not extend to bedrock and is expected that temporary dewatering will be minimal based on the clayey nature of the soil. Some removal of perched

rain water from the excavation may be required. Volumes will be quite low, and all pumped water will be subject to onsite settlement before release.

During the construction phase there is a risk of accidental pollution incidences to local water courses from spillages or leakages of fuel/oils from a number of onsite activities. There is also a potential risk from the use of concrete and cement. Please refer to the NIS for mitigation relating to the protection of Natura 2000 sites.

To minimise any impact from material spillages, all oils, paints etc. used during construction will be stored within temporary bunded areas. All tanks will be bunded to 110% of the capacity of the largest tank/container within the bunded area(s) (plus an allowance for 30mm of rainwater ingress). Refuelling of construction vehicles and the use of any hydraulic oils or lubricants will take place in a designated area (or where possible off site) which will be away from surface water gullies or drains. All contractors will be required to implement the CMP.

The implementation of mitigation measures detailed in Chapter 7 of the EIA Report will ensure that the potential impacts on the surface water environment do not occur during the construction phase and that the residual impact will be **likely, short-term-imperceptible- neutral**.

Potential impact of the development during the operational phase include;

- increased surface water run-off;
- contamination of surface water;
- foul water; and
- water supply.

The proposed surface water drainage network is designed in accordance with Sustainable Urban Drainage Systems (SuDS) to accommodate the additional hard standing and porous asphalt surfacing. This increase flow will be directed to the proposed attenuation tanks (3 in total). The attenuation tanks are adequately sized with a total attenuation volume of 1,982m³ by way of drainage calculations. The attenuation system will be fitted with a hydrobrake flow control mechanism limiting total outflow to the allowable Greenfield runoff rate.

Due to a variety of measures such as the design of the attenuation system with hydrocarbon interceptors and the design of the wider drainage system in line with SuDS the likelihood of any spills entering the water environment is negligible.

Run-off from the car park areas and access roads will drain into one of the following three options:

- Filter drains and swales - utilised in grass verges alongside estate roads
- Permeable pavement
- Underground attenuation tank –below the open space, crèche garden and car-parking areas

The increase in flow to the existing public foul sewer is not expected to have a negative effect on the foul drainage system in the area. The increase in demand for water supply is not expected to have a negative effect on the water supply in the area as IW has confirmed there is adequate capacity available.

Following implementation of the mitigation measures proposed in Section 7.5, the predicted impact on the surface water environment once the development is constructed and operational (in accordance with EPA Draft EIA Guidelines, 2017) is considered to be **likely, neutral, imperceptible and long-term**.

1.7.5 Climate and Air

AWN Consulting Limited undertook Chapter 8 providing an assessment of the likely impact on air quality and climate associated with the proposed development. Due to the site's proximity to the Drogheda Waste Water Treatment Plant an Odour Assessment was also undertaken and forms part of chapter 8.

In terms of the existing air quality environment, baseline data and data available from similar air quality zones indicates that levels of nitrogen dioxide, carbon monoxide, particulate matter less than 10 microns and less than 2.5 microns and benzene are generally well below the National and European Union (EU) ambient air quality standards.

Impacts to air quality and climate can occur during both the construction and operational phases of the proposed development. With regard to the construction stage the greatest potential for air quality impacts is from fugitive dust emissions impacting nearby sensitive receptors. Impacts to climate can occur as a result of vehicle and machinery emissions. In terms of the operational stage air quality and climate impacts will predominantly occur as a result of the change in traffic flows or congestion in the local areas associated with the proposed development. Odour impacts may also occur as a result of the nearby WWTP to the north east of the site.

Any potential dust impacts can be mitigated through the use of best practice and minimisation measures which are outlined in Chapter 8. Therefore, dust impacts will be short-term and imperceptible at all nearby sensitive receptors. It is not predicted that significant impacts to climate will occur during the construction stage due to the relatively small scale of the development and the low volume of vehicles and machinery predicted.

The local air quality modelling assessment concluded that levels of traffic-derived air pollutants resulting from the development will not exceed the ambient air quality standards either with or without the proposed development in place. Using the assessment criteria outlined in Transport Infrastructure Ireland's guidance document '*Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes*' the impact of the development in terms of PM₁₀, PM_{2.5}, CO, NO₂ and benzene is long-term and imperceptible. The proposed development is not predicted to significantly impact climate during the operational stage. Increases in traffic derived levels of NO_x, VOCs and CO₂ have been assessed against Ireland's obligations under the EU Targets and emissions ceilings set out by Directive (EU) 2016/2284 "*On the Reduction of National Emissions of Certain Atmospheric Pollutants and Amending Directive 2003/35/EC and Repealing Directive 2001/81/EC*". Impacts to climate are deemed imperceptible and long-term with regard to NO_x, VOCs and CO₂ emissions.

It is predicted that the impact of the operational phase traffic may lead to an increase in nitrogen oxide concentrations within a section of the River Boyne and River Blackwater SAC and Boyne Estuary SPA. Accordingly, the project ecologist, in accordance with TII Guidelines, was consulted and requested to separately assess the impact on sensitive ecological receptors. The project ecologist concluded there will be no effect on the habitats or species of the SAC and SPA as these are intertidal habitats with sparse terrestrial vegetation and no evidence exists that air pollution in the form of NO_x is affecting the conservation objectives for the habitats or species using these areas.

As the National and EU standards for air quality are based on the protection of human health, and concentrations of pollutants for both the construction and operational stages of the proposed development are predicted to be significantly below these standards, the impact to human health is predicted to be imperceptible and not significant in the short and long term.

There is the potential for odour impacts to occur at the proposed development as a result of the nearby WWTP. These impacts would be considered negative and brief in nature as they are unlikely to occur for prolonged periods of time. As well as this, the prevailing wind direction in the area is predominantly favourable for dispersal of any potential odour emissions away from the proposed development site, and as such, odour impacts during the operational phase of the proposed development are not considered significant. In addition, it is the responsibility of Irish Water, the operators of the WWTP to ensure no odour nuisance impacts are occurring at any nearby sensitive receptors.

No significant impacts to either air quality or climate are predicted during the construction or operational phases of the proposed development.

1.7.6 Noise & Vibration

Chapter 9 of the EiAR by Awn Consulting provides information on the assessment of noise and vibration impacts on the surrounding environment during both the construction and operational phases of the development. The future residential amenity of this new neighbourhood has also been considered by way of an inward noise assessment which also forms part of chapter 9.

When considering the potential impacts, the key sources will relate to the short-term construction phase and the long-term impacts associated with the development as a whole once operational.

The study has been undertaken using the following methodology:

- Baseline noise monitoring has been undertaken across the development site to determine the range of noise levels at varying locations across the site and at the nearest noise sensitive locations;
- A review of the most applicable standards and guidelines has been conducted in order to set a range of acceptable noise and vibration criteria for the construction and operational phases of the proposed development;

- Predictive calculations have been performed to estimate the likely noise emissions during the construction phase of the project at the nearest sensitive locations (NSL's) to the site;
- Predictive calculations have been performed to assess the potential impacts associated with the operation of the development at the most sensitive locations surrounding the development site;
- A schedule of mitigation measures has been proposed, where relevant, to control the noise and vibration emissions associated with both the construction and operational phases of the proposed development, and;
- The inward impact of noise in the surrounding environment into the proposed buildings has also been assessed to determine the requirements, for additional noise mitigation to provide suitable residential amenity.

1.7.6.1 Receiving Environment

The principal receptors to the proposed development are the individual residential properties along the south-western and south-eastern boundaries at distances of approximately 5 - 10m from the red line boundary of the site. Additional noise sensitive areas external to the site are residential properties to the north-west at a distance of approximately 130m.

The noise environment at the development site and at the nearest noise sensitive locations is relatively low and representative of a suburban setting set back from busy road traffic. Activities along the railway line and railway station/service building located to the south of the site are audible intermittently when in use, with the highest noise level recorded on the southern boundary a result of a train horn, however the overall contribution of these sources to the measured noise climate at the monitoring locations is low.

A wastewater treatment plant located to the east of the site was not audible during the noise surveys undertaken. It is likely, however, the operation of this facility influenced the background noise levels during night-time periods, albeit at low level. The main noise sources were noted to be from birdsong, distant traffic and occasional overhead aircraft in line with a semi-rural setting

1.7.6.2 Construction Phase Summary

A variety of items of plant will be in use for the purposes site clearance and construction. The type and number of equipment will vary between the varying construction phases depending on the phasing of the works. There will be vehicular movements to and from the site that will make use of existing roads. Due to the nature of these activities, there is potential for the generation of elevated levels of noise

A range of indicative noise calculations have been undertaken for the construction phase assuming typical construction plant items. The assessment has determined that special consideration will need to be given to the residential dwellings located along the immediate southern boundaries to reduce potential significant impacts.

Construction noise levels at remaining noise sensitive locations further north, east and south of the site boundary are determined to be within the adopted construction noise criteria.

The use of best practice noise control measures, hours of operation, scheduling of works within appropriate time periods, strict construction noise limits and noise monitoring during this phase will ensure impacts are controlled to within the adopted criteria. Similarly, vibration impacts during the construction phase will be well controlled through the use of low impact equipment and adherence to strict limit values which will be subject to monitoring at the nearest sensitive buildings.

1.7.6.3 Operational Phase Summary

During the operational phase, there will be increased traffic volumes on the surrounding road network as a result of the proposed development. Due to the existing volume of traffic along the surrounding network, the additional traffic volumes represent a small percentage of the overall traffic flows and hence the calculated increase in noise level has been determined to be neutral, imperceptible and long term. The greatest increase in traffic noise is calculated along the South Quay (R150) and Marsh Road (West), however the increase in traffic noise along these roads is determined to be imperceptible.

In summary, the predicted increase in noise levels associated with vehicles at road junctions in the vicinity of the proposed development is of long-term imperceptible impact.

Once operational, there will be building services plant items required to serve the office building, crèche and ground floor commercial units of Blocks 9 and 10. These will typically be limited to heating and cooling plant and extract units, depending on the building design and user requirements. Given the use of these buildings, the majority of plant items are likely to be required during daytime hours only, however, there may be requirement for night-time operational plant, depending on specific requirements.

These items will be selected at a later stage, however, they will be designed and located so that there is no negative impact on sensitive receivers within the development itself. The combined operational noise level from building services plant at the nearest noise sensitive location within the development (e.g. apartments, crèche rooms etc.) will be designed/attenuated to meet external noise criteria for day and night-time periods that are included in Section 9.2.2.3 of the EiAR and are set in accordance with best practice standards. These limits are set in order to achieve acceptable internal noise levels within residential spaces.

Assuming the operational noise levels do not exceed the adopted design goals, the resultant residual noise impact from this source will be of neutral, imperceptible, long term impact

1.7.6.4 Inward Noise Impact Summary

The potential for noise intrusion from existing and future noise sources in the surrounding environment to buildings within the development site has been assessed to determine the suitability of the site for residential elements and to advise on any noise reductive measures to the development boundaries or proposed buildings. An initial site noise risk assessment has been carried out on the proposed mixed use development at Marsh Road, Drogheda in the townland of Newtown, Drogheda, Co. Louth. The initial site assessment has classified the development site as having a low to medium noise risk in accordance with The Professional Guidance on Planning & Noise (ProPG) document (2017). This was determined through a review of baseline noise measurements, noise modelling of the site for existing rail noise and potential future traffic noise from existing roads the and proposed site access road.

The assessment concluded that overall environmental noise levels at the proposed residential buildings, office block and crèche are not significant across the majority of the site and hence would not require any specific noise mitigation measures in order to achieve suitable internal noise levels with windows open and closed.

Highest noise levels are calculated at the terrace houses along the southern site boundary and along the east façade of Apartment Block 7 and terrace houses along the east and north-east of the site overlooking the new site access road.

Boundary treatment is recommended to the south of the site using a solid blockwork wall, or acoustic timber screen at a height of 2.5m to reduce noise levels external to terrace houses along this boundary. In addition to physical screening, enhanced acoustic glazing and vents are recommended at these properties and at windows to the east of Apartment Block 7. Specific details of boundary treatments and glazing requirements are set out in the relevant sections of Chapter 9.

1.7.7 Material Assets – Traffic

1.7.7.1 Introduction

Project Engineers Waterman Moylan Consulting Engineers undertook chapter 10 of this EIAR. This chapter refers to the Traffic and Transport Assessment also prepared by Waterman Moylan Consulting Engineers under separate cover.

1.7.7.2 Proposed Road Network

Access to the subject site will be via a new access road from the Marsh Road which has recently received funding from the Local Infrastructure Housing Activation Fund (LIHAF) in recognition of the strategic importance of the lands in the delivery of much needed housing in the Drogheda area.

Furthermore, this road has been granted planning under Reg. Ref. 17/387 and includes permission for a proposed 133 No. residential development located on the opposite side of the proposed access road to the south-east of the subject site. Where the LIHAF road adjoins the subject site, these lands are controlled by the applicant. The section of the LIHAF road to the north of the subject site as far as Marsh Road will be facilitated by Louth County Council to allow for access to the proposed development. Notwithstanding the extant permission for this road, the LIHAF Road is included in this SHD application and all necessary consents have been issued by Louth County Council in this regard.

The proposed internal site road is generally 6.0 m wide with a 2.0 m wide footpath. Crossing points are located at various points within the development such that unimpeded pedestrian movement is facilitated.

1.7.7.3 Sustainable Access

The proposed development includes the provision of pedestrian and cycle links only to the south of the site via McGrath's Lane/Railway Terrace towards the Drogheda Train Station, Dublin Road, and further to the Drogheda Bus Station and Town Centre. There will be no vehicular access to the development site from McGrath's Lane / Railway Terrace.

To facilitate safe access for vulnerable road users, improvement works are proposed for McGraths Lane and Railway Terrace. These upgrades include the widening of McGraths Lane from its current width of c. 2.75m to a shared surface with a width of c. 5.8m. The shared surface will consist of a 1.8m wide pedestrian strip and a 4.0m wide carriageway with appropriate signing and linage provided. In respect of Railway Terrace, it is proposed to widen the existing footpath to a minimum of 2m. Where the road carriageway reduces below 5m as a result of same, yield signage and marking will be provided. Cyclists will be kept on road in this section which is considered appropriate given the low traffic volumes and speeds anticipated along this link. Public lighting to Louth County Council Standards will also be provided along the extents of the route.

No vehicular access to the proposed development will be facilitated along this route. McGraths Lane will continue to provide vehicular access to the 2 No. existing properties located to the south of the development site, and which are currently accessed using this lane.

These improvement works form part of the SHD application and appropriate consents have been issued to the applicant by Louth County Council. No third party lands are needed to execute these improvements. The proposals have been subject to a Stage 1 Road Safety Audit and proposed measures accepted.

1.7.7.4 Traffic Impact

In order to quantify the volumes of traffic movements at key points on the road network adjacent to the site, a set of classified turning movement traffic counts were commissioned.

Two manual classified traffic two-way flow surveys were carried out by IDASO Ltd. on Tuesday 20th February 2018 at R150 (Marsh Road) and by TRACSIS on Tuesday 19th June 2018 at 2 No. signalised junction and 1 No. priority junction during the peak hours of 07:00 – 10:00 and 16:00 – 19:00. The junctions surveyed were:

- Site 01: Dublin Road (R132)/Shop Street (Signalised);
- Site 02: South Quay (R150)/Shop Street (Signalised);
- Site 03: Marsh Road (R150)/Mill Road (Priority) and
- Site 04: R150 Marsh Road two-way flows.

The traffic generation potential of the proposed development has been estimated using the TRICS software modelling database. The trip rates generated from TRICS generally take into account the development size, mix of land use types, and the proximity of the site to high quality public transport options such as the Drogheda Train Station.

The traffic modelling carried out as part of this TTA includes the analysis of 4 No. junctions of the surrounding road network as set out below;

- Junction 01: Rathmullan Road/Local Road/Site Access (Signalised),
- Junction 02: Rathmullan Road/Marleys Lane (Signalised),
- Junction 03: Rathmullan Road/R132 Dublin Road (Priority)
- Junction 04: Donore Road/Marley's Lane (Signalised).

Junction 1 – Dublin Road (R132)/Shop Street – Four-arm signal-controlled junction

Junction 2 – South Quay (R150)/Shop Street – Three-arm signal-controlled junction

Junctions No. 1 and 2 are two existing signal-controlled junctions that are located in close proximity, approximately 35m from each other. In order to optimise the performance of Junction 1 and Junction 2, these have been modelled as a single junction with a synchronised controller stream.

The TRANSYT modelling results, with the inclusion of the proposed and committed developments (2037 + DEV + COMM), indicate that the junctions will operate close to their capacity during both peak periods, with a maximum DoS value of 96% and a corresponding queue of 19.59 vehicles recorded for the AM and 92% DoS and corresponding queue of 16.59 vehicles for the PM.

Junction 3 – Marsh Road (R150)/Mill Road – Priority Junction.

Junction No. 3 is an existing priority junction. The junction has been modelled utilising its current configuration of a priority junction

The TRANSYT analysis results indicate that the junction will operate within capacity during the 2037 plus proposed plus committed developments scenario with the highest Ratio of Flow to Capacity (RFC) at 19% during the AM peak period and 21% during the PM peak period.

Junction 4 – Marsh Road (R150)/LIHAF Access Road – Proposed Priority Junction

Junction No 4 is a proposed priority junction which will provide access to the proposed development and adjacent approved scheme.

The PICADY analysis results indicate that the proposed junction will operate well within capacity during the 2037 plus proposed plus committed developments scenario with the highest Ratio of Flow to Capacity (RFC) at 25% during the AM peak period and 28% during the PM peak period.

Summary

The results from the traffic modelling above, show that the proposed development can be catered for by the surrounding road network. Junctions 1 and 2 operate with a maximum DOS of 96% in the 2037 future year scenario (PM peak), which includes committed development from the adjacent 133 No. unit residential scheme (permitted under Reg. Ref 17/387). It is noted that these results have been achieved by optimising the phasing of these two junctions to operate in tandem.

1.7.7.5 Operational Phase

The local road network provides suitable infrastructure and transport services for travel by sustainable modes to/from the proposed development. The subject site is located in close proximity to local schools, community centres, shopping centres and public transport options. Pedestrian links between the proposed development and the local community facilities and amenities outlined above will be provided as part of the works.

The analysis of road network surrounding the subject site has shown that the existing and proposed upgraded junctions will operate within acceptable parameters. Therefore, there will be no negative impact on traffic as a result of the proposed development.

1.7.8 Material Assets – Waste Management

AWN Consulting Ltd. carried out an assessment of the potential impacts associated with waste management during the construction and operational phases of the proposed development contained at Chapter 11 of this EiAR. The receiving environment is largely defined by Louth County Council as the local authority responsible for setting and administering waste management activities in the area through regional and development zone specific policies and regulations.

During the demolition and construction phases, typical C&D waste materials will be generated which will be source segregated on-site into appropriate skips/containers, where practical and removed from site by suitably permitted waste contractors to authorised waste facilities. Where possible, materials will be reused on-site to minimise raw material consumption. Source segregation of waste materials will improve the re-use opportunities of recyclable materials off-site. Soils and stones will require excavation to facilitate site preparation, construction of the under-croft basement, building foundations and access roads and the installation of underground services. The project engineers, Waterman Moylan, have estimated that c. 70,000m³

of surplus soils and stones will be generated from the excavations. It is anticipated that this surplus material will require removal from site for offsite reuse, recovery, recycling and/or disposal.

A carefully planned approach to waste management and adherence to the site-specific Construction and Demolition Waste Management Plan (Appendix 11.1) during the construction phase will ensure that the effect on the environment will be short-term, neutral and imperceptible.

During the operation phase, waste will be generated from the residents as well as the retail, office and crèche tenants. Dedicated waste storage areas have been allocated for each of the apartment and duplex blocks. The semi-detached houses will store their three bins to the rear of their properties. The terrace houses will have a dedicated screen space to the front of their units for storage of their three bins (i.e. bins for organic, dry mixed recyclable waste and non-recyclable waste). The waste storage areas have been appropriately sized to accommodate the estimated waste arisings. The retail, office and crèche tenants will also have dedicated waste storage areas. The waste storage areas have been allocated to ensure a convenient and efficient management strategy with source segregation a priority. Waste will be collected directly from the waste storage areas for the apartments, duplexes and commercial units and from the front of the houses by permitted waste contractors and removed off-site for re-use, recycling, recovery and/or disposal at permitted/licenced facilities.

An Operational Waste Management Plan has been prepared which provides a strategy for segregation (at source), storage and collection of wastes generated within the development during the operational phase including dry mixed recyclables, organic waste and mixed non-recyclable waste as well as providing a strategy for management of waste glass, batteries, WEEE, printer/toner cartridges, chemicals, textiles, waste cooking oil and furniture (Appendix 11.2). The Plan complies with all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated into the design of the development.

Provided the mitigation measures outlined in Chapter 11 are implemented and a high rate of reuse, recycling and recovery is achieved, the predicted effect of the operational phase on the environment will be long-term, neutral and imperceptible.

1.7.9 Material Assets – Built Services

Waterman Moylan Consulting Engineers undertook chapter 12 of this EiAR. Below is a summary of their findings.

1.7.9.1 Surface Water

At present, the site drains via a network of ditches and culverts and outfalls to the River Boyne to the north of the site. It is proposed that the development shall drain via gravity and discharge at a restricted rate into the proposed 225 mm diameter surface water sewer to be constructed below the LIHAF access road granted planning under reg. ref. 17/387. Ultimately, surface water will outfall to the existing surface water sewer on Marsh Road adjacent the wastewater treatment plant.

The surface water system for the proposed development is designed to comply with sustainable urban drainage systems (SuDs) best practice. Sustainable urban drainage systems reduce surface water runoff from the development to the equivalent of the existing agricultural runoff and improve the quality of the water.

Potential impacts during construction are set out below

- There is a risk that once topsoil has been stripped from the site there will be higher runoff rates from the lands with increased amount of silt to existing watercourses in the runoff.
- There is a risk of pollution of groundwater / watercourses / soils by accidental spillage of oils / diesel from temporary storage areas or where maintaining construction equipment.
- There is a risk of damage to existing buried utilities during excavations works resulting in temporary loss of supply to existing properties
- There is a possibility of a temporary increase in traffic due to deliveries of materials and other construction related traffic.
- There will be some minor disruption to traffic when constructing the outfall pipe along Marsh Road.
- Cross connection between surface water and foul pipes.

In order to reduce the potential impacts on surface water identified during construction the following reductive measures will be implemented:-

- The contractor will appoint a suitably qualified person to oversee the implementation of measures for the prevention of pollution to the receiving surface water environment.
- Cut off trenches with settlement ponds / silt-traps will be implemented.
- Regular testing of surface water discharges will be undertaken at the outfall from the subject lands.
- Where silt control measures are noted to be failing or not working adequately, works will cease in the relevant area. The project ecologist will review and agree alternative pollution control measures, such as deepening or redirecting trenches as appropriate, before works may recommence.
- All fuels and chemicals will be bunded, and where applicable, stored within double skinned tanks / containers.
- All existing services will be located using service records, GPR surveys and slit trenches to ensure that their position accurately identified before excavation works commence.
- Temporary traffic management will be implemented as appropriate during the construction of the outfalls on Marsh Road.

During operational phase surface water discharge from the site will be restricted by means of attenuation therefore no adverse impact in respect of flooding downstream will arise from the proposed development.

The installation of trapped gullies in accordance with BS 5911 will minimise the risk of contamination of the surface water system by floating debris.

The installation of a Sustainable Urban Drainage Systems, which includes permeable paving/surfacing, filter drains, swales and attenuation systems will improve water quality to the surface water discharged to the Boyne River. A Natura Impact Statement accompanies this application.

There is a potential impact for the discharge of contaminants from surfaced areas within the development to the Boyne River. These would include particulates, oil, etc. The quality of runoff from the site would be dependent on the time of year, weather, particulate deposition from the atmosphere and any gritting or salting carried out by the Local Authority. The time of year has a major bearing on the quality of storm water run-off - in particular the first rains after a prolonged dry period where accumulated deposits of rubber, particulates, oils, etc. are washed away. However, the impact from such run-off is likely to be slight due to the dilution process. In this regard the proposal has been subject to Stage 2 Appropriate Assessment that concludes with specified mitigation measures significant impacts on the Natura 2000 sites can be ruled out.

Stagnation of the water and siltation within the hydrobrake manhole may occur. Silt would be collected at a sump and removed periodically.

1.7.9.2 Water Supply

The existing sources of potable water supply to proposed development site is a water main on Marsh Road. The proposed development will be serviced via a new connection to this main.

During the construction stage there is a risk of contamination of the existing water supply when connection of the developments watermains to the public water supply is being made. There will be an increase in water demand from the site construction works.

In order to address the potential for risk of contamination all water mains will be cleaned and tested to the satisfaction of Irish Water prior to connection to the public water main and all connections to the public water main will be carried out under the supervision of Irish Water.

During operational phase the proposed development will result in an increase in water demand on the water distribution network. This increase in demand can be catered for in the existing network.

Contamination of the existing water supply network may result if unsterilised mains are connected to the public network. This would be mitigated against by scouring out the mains, swabbing and chlorinating the mains prior to connection to the public supply and occupation of any of the units.

The proposed development will not give rise to any significant long term adverse impact on water supply. Minor negative impacts during the construction phase, such as disruption in water supply when connections to the public main are being carried out, will be short term only.

1.7.9.3 Foul Water Drainage

There is an existing foul sewer located in Marsh Road to the north of the proposed development. The foul sewer drains to the Marsh Road pumping station where it is pumped via a rising main to the Drogheda Wastewater Treatment Plant.

It is proposed that the foul sewerage from the site will drain via gravity and outfall to the existing 225 mm diameter foul sewer on Marsh Road to the north of the subject site. The connection to this sewer will be via c. 430 m of new 225 mm diameter sewer to be constructed as part of the LIHAF access road (reg. ref. 17/387). Ultimately, the foul water will drain to the existing Irish Water Pump Station on Marsh Road where it is pumped via a rising main to the nearby Drogheda Wastewater Treatment Plant.

Potential impacts during construction are set out below:-

- There is a risk of the ingress of ground/surface water to the foul water network.
- There is a risk of damage to existing buried utilities during excavations works resulting in temporary loss of supply to existing properties.
- There is a possibility of a temporary increase in traffic due to deliveries of materials and other construction related traffic.
- There will be some disruption to traffic during construction works on the public road.
- Cross connection between foul and surface water pipes.

In order to reduce the potential impacts identified during the construction phase the following reductive measures will be implemented:

- All existing services will be located using service records, GPR surveys and slit trenches to ensure that their position accurately identified before excavation works commence.
- Foul water pipes to be laid with sufficient falls to ensure self-cleansing velocity
- Foul and surface water pipes will be carefully laid so as to minimise the potential for cross connections.

During the operational phase the impact of the proposed development on the existing foul drainage systems will be to increase the quantity and rate of discharge of waste water from the site to the existing foul sewer system. These increased flows can be accommodated within the existing drainage network. All foul drains and sewers will be tested and surveyed prior to connection to the public sewers to minimise the risk of uncontrolled groundwater penetration or leakage of foul water to ground water on the site.

1.7.9.4 ESB Supply

There are overhead cables including two High Voltage Lines (38 KV) which traverse the entire development site in an east-west direction. There is a single overhead Medium Voltage Line (10 KV/20KV) which also traverses the site in an east-west direction. There is also a Low Voltage (400V) line near the southern boundary. These lines will need to be undergrounded and/or diverted to facilitate the development of the site.

A new Medium Voltage below ground network will be provided in the proposed development which will connect to the existing ESB Networks infrastructure. ESB will be consulted with during the design stage to agree the layout and connection points. It is ESB Networks policy not to engage with prospective developments until planning permission is granted and the development is formally named.

During construction stage there is that the relocation or diversions of the existing overhead ESB lines may lead to loss of connectivity to and / or interruption of the supply from the electrical grid to the surrounding areas.

Diversion works will be planned in conjunction with ESB Networks to incur minimal impact, with users notified in advance of any works.

1.7.9.5 Gas Supply

There is an existing 180mm medium-pressure gas main (4 bar) in the Marsh Road to the north of the development area. If gas is adopted as the fuel source of choice for the heating systems in the scheme, a new gas connections be made at the northern boundary of the site at the Marsh Road. The exact extent and location of these connections will be agreed with Gas Networks Ireland during the design stage of the project.

During construction stage there is potential for loss of connection to the Gas Networks Ireland infrastructure while carrying out service connection works. To minimise potential impacts the connections to the existing gas networks will be coordinated with the relevant utility provider and carried out by approved contractors.

1.7.9.6 Telecommunications

There are existing telecommunication services on Marsh Road. A new connection will be made to the existing telecommunication networks at the northern boundary of the site at the junction of the Marsh Road and the LIHAF Road. The exact extent and location of these connections will be agreed with the service providers during the design stage of the project.

During construction stage there is potential for loss of connection to the Telecommunications infrastructure while carrying out works to provide service connections. To minimise potential impacts the connections to the existing telecommunication networks will be coordinated with the relevant utility provider and carried out by approved contractors.

1.7.10 Cultural Heritage including Archaeology

Chapter 13 contains a cultural heritage and archaeological assessment by ASCU, which comprised a desk-top study and fieldwork, was undertaken in order to identify and describe known and potential archaeological and cultural heritage constraints within the proposed development area and its environs and to offer recommendations for the mitigation of such potential impacts. The site of the proposed development contains no Recorded Monuments listed within the Record of Monuments and Places (RMP), although it is located 0.70 km to the northeast of LH024-039 (mound), which is scheduled for inclusion in the next revision of the Record of Monuments and Places. The site is also located 0.90 km east of the zone of archaeological potential associated with the Historic Walled Town of Drogheda (KD024-041). Neither of these recorded monuments will be directly impacted by the proposed development of the site at Newtown. The site is, however, located within the Boyne Valley, close to the south bank of the River Boyne and this overall landscape is of considerable archaeological significance.

A study of the recorded archaeological, architectural and cultural heritage sites located within the surrounding townlands and a review of previous archaeological assessments and excavations listed within the Database of Irish Excavation Reports, suggest that the overall landscape within which the proposed development is located should be considered as having a high archaeological potential. This is due to the number of previously unrecorded archaeological sites that have been identified during assessments of prior development projects within the environs. The majority of these were previously unrecorded and had no surface expression.

A geophysical survey of the proposed development site was conducted by Donald Murphy and Robert Breen of Archaeological Consultancy Services Unit (ACSU) between 2 and 9 January 2019, under license 19R0005. This identified clear signs of archaeological potential, particularly in Field 2 (eastern field), which included a possible enclosure along the eastern boundary. The survey of Field 1 (western field) produced disturbed readings as a result of overhead powerlines, but also a number of curvilinear anomalies.

A program of test trenching was undertaken by Linda Clarke of ACSU between 24 and 30 January 2019, under licence 19E0017. It comprised the excavation of nine test trenches to investigate the enclosure ditch and other potential archaeological anomalies identified in the geophysical survey, as well as a general assessment of the investigation area. There were some restrictions to the test area, including a crop in the field that prevented the excavation of offset trenches and overhead electricity cables that necessitated gaps in the linear test trenches. In Field 1, this investigation exposed a scattering of features including a number of linear features, a post-hole and a cremation pit along Trench 5 and a keyhole-shaped kiln at the southern end of Trench 6c. In Field 2 an enclosure ditch with a diameter of c. 28m was exposed at the eastern side of the test area on a flat plateau overlooking the River Boyne to the north. A large pit and linear features within a 20m exclusion zone around the enclosure were also identified to the west in Trench 1. These features show that the area of investigation has the potential for more archaeological elements to be uncovered with topsoil removal.

The predicted impacts on the known archaeological, architectural and cultural heritage are regarded as being imperceptible, with no direct impacts on the recorded archaeological resource identified and no indirect (visual) impact on the nearest recorded monument (LH024-039) outside the proposed development site boundary. The proposed development will, however, have a direct impact on previously unknown archaeological features identified during geophysical survey and test trenching of the development site, and on further such features that may yet be found within the development site. The potential impact significance on these features prior to mitigation should therefore be considered to be profound.

Where archaeological material/features have been shown to be present on site, mitigation should either involve preservation *in situ* (avoidance) or preservation by record (excavation). In this instance, the former option is not appropriate, as such preservation by record (excavation) is the preferable option. In advance of construction, adequate areas should be stripped around the features identified during test trenching in order to determine their full extent and significance. All features thus exposed should then be subjected to full archaeological excavation by a suitably qualified archaeologist under licence from the National Monuments Service (NMS) of the Department of Culture, Heritage and the Gaeltacht in order to preserve the features by record. A licence (19E0433) for this work has been granted by the NMS to Linda Clarke of ACSU.

Archaeological monitoring of all remaining topsoil removal associated with the proposed development should also be undertaken. The monitoring should be carried out under licence from the NMS by a suitably qualified archaeologist (see above). Any further archaeological sites and/or features identified during topsoil removal, and which will be directly impacted by the development, will be preserved by record (excavation). The appointed archaeologist shall consult with the Licensing Section of the NMS if further archaeological features are uncovered and methodologies shall be agreed regarding their resolution. Adequate time and resources will be provided by the developer for (1) the resolution of any archaeology identified within the development site which will be directly impacted upon by ground works and (2) any post-excavation work and specialist analysis necessary following any archaeological excavation that takes place. A report will be compiled on completion of the archaeological excavation and monitoring and will be submitted to the relevant authorities.

If the recommended mitigation measures are implemented the residual impacts on the cultural heritage, including archaeology, of the proposed development are likely to be slight to imperceptible.

1.7.11 Landscape

Chapter 14 was prepared by Ronan MacDiarmada of RMDA and should be read in conjunction with the photomontages prepared by 3D Design Bureau under separate cover.

The visual receptors were chosen following a visit to the site and to an extended area surrounding the site, with particular emphasis on the Baltray Road on the north side of the river, the Marsh Road on the south side of the river. In addition, the medieval centre of Drogheda and potential impacts on protected views and buildings were also assessed. Following this exercise the location of the photomontages were chosen so views from sensitive locations with and without the development could be assessed. As concluded, there is no negative visual impacts on any protected views or the setting or character of protected buildings or the general setting and character of the town of Drogheda, including the medieval centre. As the site is set back some 300 metres from the southern bank of the river, the site and the proposed development does not enter into the dominant viewfield of the Medieval town area on either the Baltray Road or Marsh Road approaches to the town or the river itself. Equally, given the topography of the town, distances, intervening buildings and structures and the landscape, there are no views of the site, or of the proposed development from the medieval core of the settlement, or any protected structures (other than the viaduct).

In terms of the potential for visual impact the following is noteworthy in terms of the existing and emerging development patterns surrounding the site –

- 1.The development site is zoned for development of the type proposed.
- 2.The lands between the northern boundary and the river are also zoned for development.
- 3.The Development Plan specifically calls for high density residential development under that zoning.
- 4.The topography of the site does no lend itself to large floor plate buildings and in any event such a building typology would be dominant in the landscape.
- 5.There is planning permission for 133no. houses and the LIHAF Road to the south east of the application site.
- 6.The existing landscape features large infrastructure developments including the Wastewater Treatment Plan, train line, train services building and Flogas LPG depot.

At the early stages, during site development works and initial construction, the visual impact of the development will be negative, due to the reduction in open space and the removal of some of the existing hedgerows. However the well-designed development, including the type and quality of materials and finishes proposed as well as the landscape proposal, and retention of much of the existing boundary hedgerows, shall provide a positive visual impact in the long term.

The increase and coherent design of external spaces, shall replace the existing field systems. Direct access to connection to Drogheda town, utilising the existing connections shall provide a positive visual long term impact.

The retention of much of the existing native hedgerows on the boundaries, retention of habitats along with the proposed planting shall provide a connection with nature which shall be a positive long term visual impact.

Although the character of the environment shall change, it is in line with emerging patterns of development in Newtown and Drogheda. As noted, the area forms a zoned extension area for the town of Drogheda and surrounding lands are either already developed or are designated for development in the statutory Development Plan. The landscape character of this area will change, irrespective of the proposed development. The proposal is however sympathetic to the surrounding landscape and shall present a positive visual impact in the long term.

The increased tree cover shall also enhance and increase the biodiversity of the existing landscape and tie in with the existing hedgerows and trees.

The duration of construction shall have a negative visual impact in the short term. However the long term impact shall be moderate as development forms part of an emerging trend of construction in the area.

The proposed development shall influence the surrounding land use, providing organised open space and a new urban environment that is sympathetic to its surrounding context and setting including existing and emerging built elements. The development, including the housing shall be an addition to the existing urban fabric of Newtown and Drogheda, and in the long term have a positive impact upon the landscape and its usage as detailed in the landscape proposals.

The development shall provide a coherent ordering of buildings and external spaces and present a positive visual impact upon the existing development and shall not detract from the local landscape.

Therefore the visual impact upon the nature of the landscape shall be significant in the short term, moderate in the medium term resulting and positive in the long term.

1.8 Description of the expected significant adverse effects of the project on the environment deriving from the vulnerability of the project to risks of major accidents and/or disasters

A COMAH Land Use Planning Assessment of the proposed development has been undertaken and is included as Appendix 4.1 of this EiAR. Chapter 4, section 4.8 contains the assessment of the potential impact on human health due to the position of the application site to the south of the Flogas LPG terminal. Below is summary of the assessment.

During the operational phase the principal human health concern will arise due to the proximity of the proposed development to the Flogas Ireland Ltd. Liquefied Petroleum Gas (LPG) Terminal at Marsh Road, Drogheda, Co. Louth. The footprint of the development is located approximately 225 m south west of the LPG terminal.

The LPG terminal is an Upper Tier COMAH establishment, and is subject to the provisions of the European Communities (Control of Major Accident Hazards Involving Dangerous substances) Regulations, S.I. 209 of 2015 (2015 COMAH Regulations). This is due to the presence of quantities of LPG above the threshold quantity specified in the 2015 COMAH Regulations (> 200 tonnes for Upper Tier establishments).

LPG an extremely flammable gas and is stored as a liquefied gas under pressure at ambient temperature in 20 No. storage vessels at the Flogas terminal. People at the proposed development are potentially at risk from the overpressure and heat effects of a Boiling Liquid Expanding Vapour Explosion (BLEVE) and fireball in the event of catastrophic failure of an LPG vessel. The physical effects of these scenarios were calculated and the assessment concludes that heat and overpressure levels at the proposed development site are less than that which would cause 1% probability of fatality. It is concluded that an LPG BLEVE at the Flogas Terminal will not result in any fatalities at the proposed development site.

Individual risk based land use planning zones were calculated and mapped following the methodology described in the Policy and Approach of the Health & Safety Authority to COMAH Risk-based Land-use Planning (HSA, 2010). Individual risk contours corresponding to the boundary of the inner, middle and outer risk based land use planning zones were mapped and it is concluded that the land use planning zones for the Flogas LPG terminal at Marsh Road to not extend to the proposed development site. The outer zone falls in close proximity to the development site boundary, but does not reach the site boundary.

The proposed development includes residential use, commercial use, office use, a crèche, parking facilities and outdoor open spaces. The HSA's land use planning policy does not place restrictions on this type of development occurring outside (but close to) the outer land use planning zone subject to societal risk considerations for developments with large populations. Societal risk considers the number of persons potentially impacted by an adverse event such as a major accident.

Societal risk was assessed using the Scaled Risk Integral (SRI) approach which is recommended by the HSA in the Policy and Approach to COMAH Risk-based Land-use Planning document (HSA, 2010). The total SRI value was calculated as 9711. The HSA does not cite acceptability criteria that applies to the SRI value for new developments in the vicinity of COMAH establishments. In the UK, the Health and Safety Executive have published SRI criteria in their Criteria document for Land Use Planning cases of serious public safety concern, SPC/TECH/GEN/49 (UK HSE, 2007). The UK HSE consider serious public safety concern to arise where the SRI is between 500,000 and 750,000 and societal risk to be intolerable where the SRI exceeds 750,000. The SRI estimation for the proposed development at 9711 is significantly lower than levels corresponding to serious public safety concern in the UK. It is concluded that the level of societal risk at the proposed development is negligible.

The proposed development site is located at sufficient distance from the Flogas LPG Terminal such that no fatalities are expected to arise in the event of failure of an LPG vessel accompanied by a BLEVE and fireball.

Therefore no mitigation measures recommended in terms of site layout or restrictions on population density at the proposed development. The HSA was consulted at pre-application stage and has confirmed it has no objections.

1.9 Climate Change

The Directive 2014/52/EU recognises that climate change will continue to cause damage to the environment and compromise economic development. In this regard, it is appropriate to assess the impact of projects on climate and their vulnerability to climate change.

Annex IV of the EIA Directive includes direct reference to climate and climate change in two provisions. The emphasis is placed on two distinct aspects of the climate change issued-

- Climate change mitigation – this considers the impact the Project will have on climate change, through greenhouse gas emissions primarily;
- Climate change adaptations – this considers the vulnerability of the Project to future changes in the climate, and its capacity to adapt to the impacts of climate change, which may be uncertain.

The provisions of the EIA Directive as transposed into the Planning and Development Regulations 2001 (as amended) require an Environmental Impact Assessment Report to contain information in relation to *“The impact of the proposed development on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the proposed development to climate change”* (Schedule 6 (2), (e), (VI)).

This section of the EiAR will summarise the potential impacts of the proposed project relating to climate change.

1.9.1 Potential Impacts on Climate Change

Most projects have an impact on greenhouse gas emissions, compared to the baseline through their construction and operation and through indirect activities that occur because of the Project. It is expected that the potential impact on Climate Change that could result from the proposed development relates to traffic and the emission of greenhouse gases.

An assessment of the potential of the proposed developments to generate direct greenhouse gas emissions and selected pollutants is assessed at Chapter 8 ‘Air Quality and Climate’ of this EiAR. We note that the model detailed at section 8.2 of Chapter 8 ‘Air Quality and Climate’ of this EiAR does not take into account improvements in emissions in future years e.g. move away from polluting and carbon intensive propulsion systems to new technologies such as electric vehicles. As such it could be considered as a ‘worst case’ scenario.

Nonetheless, this assessment concludes the potential for greenhouses gas emissions from the proposed development will be imperceptible both in the short and long term (see para. 8.5.1.2).

1.9.2 Baseline

Climate change refers to significant change in the measures of climate, such as temperature, rainfall, or wind over a long period of time. The National Adaptation Framework⁴ outlines the summary of observed and projected climate changes and impacts for Ireland as illustrated by Figure 1.2.

The report ‘Our Sustainable Future, A Framework for Sustainable Development for Ireland’⁵ requested the Central Statistics Office to develop a sustainable development indicator set in consultation with other government departments and agencies. Sustainable Development Indicators Ireland (2017)⁶ is the third edition of Sustainable Development Indicators Ireland, which is published on a biennial basis.





Parameter	Observed	Projected	Example of Biophysical Impacts
 Temperature	<ul style="list-style-type: none"> Average temperatures have increased by 0.8°C since 1900, an average of 0.07°C per decade. The number of warm days (over 20°C) has increased while the number of cold days (below 0°C) has decreased. 	<ul style="list-style-type: none"> Projections indicate an increase in average temperatures across all seasons (0.9-1.7°C). The number of warm days is expected to increase and heat waves are expected to occur more frequently. 	<ul style="list-style-type: none"> Incidences of cold stress are likely to decrease while incidences of heat stress will increase. The duration of the growing season will increase, occurring earlier and extending farther.
 Precipitation	<ul style="list-style-type: none"> Increase in average annual national rainfall of approximately 60mm or 5% in the period 1981-2010, compared to the 30-year period 1961-1990. The largest increases are observed over the west of the country. 	<ul style="list-style-type: none"> Significant reductions are expected in average levels of annual, spring and summer rainfall. Projections indicate a substantial increase in the frequency of heavy precipitation events in Winter and Autumn (approx. 20%). 	<ul style="list-style-type: none"> The increased occurrence of dry spells will result in increased pressure on water supply. An increase in the frequency of extreme precipitation events will result in increased fluvial and pluvial flood risk.
 Wind Speed and Storms	<ul style="list-style-type: none"> No long-term change in average wind speed or direction can be determined with confidence. The number and intensity of storms in the North Atlantic has increased by approx. three storms per decade since 1950. 	<ul style="list-style-type: none"> Projections indicate an overall decrease in wind speed and an increase in extreme wind speeds, particularly during winter. The number of very intense storms is projected to increase over the North Atlantic region. Projections suggest that the winter track of these storms may extend further south and over Ireland more often. 	<ul style="list-style-type: none"> Increases in extreme wind speeds may impact on wind turbines and the continuity of power supply. Infrastructure will be at risk due to the increased occurrence of intense storms (e.g. winter 2013/2014).
 Sea Level and Sea Surface Temperature	<ul style="list-style-type: none"> Historically, sea level has not been measured with the necessary accuracy to determine sea level changes around Ireland. However, measurements from Newlyn, in southwest England, show a sea level rise of 1.7cm per decade since 1916. These measurements are considered to be representative of the situation to the South of Ireland. Sea surface temperatures have increased by 0.85°C since 1950, with 2007 the warmest year in Irish coastal records. 	<ul style="list-style-type: none"> Sea levels will continue to rise for all coastal areas, by up to 0.8 m by 2100. The south of Ireland will likely feel the impacts of these rises first. Sea surface temperatures are projected to continue warming for the coming decade. For the Irish Sea, projections indicate a warming of 1.9°C by the end of the century. 	<ul style="list-style-type: none"> Significant increase in areas at risk of coastal inundation and erosion. Increased risk to coastal aquifers and water supply. Change in distribution fish species; Implications for fisheries and aquaculture industries.

Figure 1.2 - Extract from the National Adaptation Framework – Observed and Projected Climate Changes and Impacts for Ireland

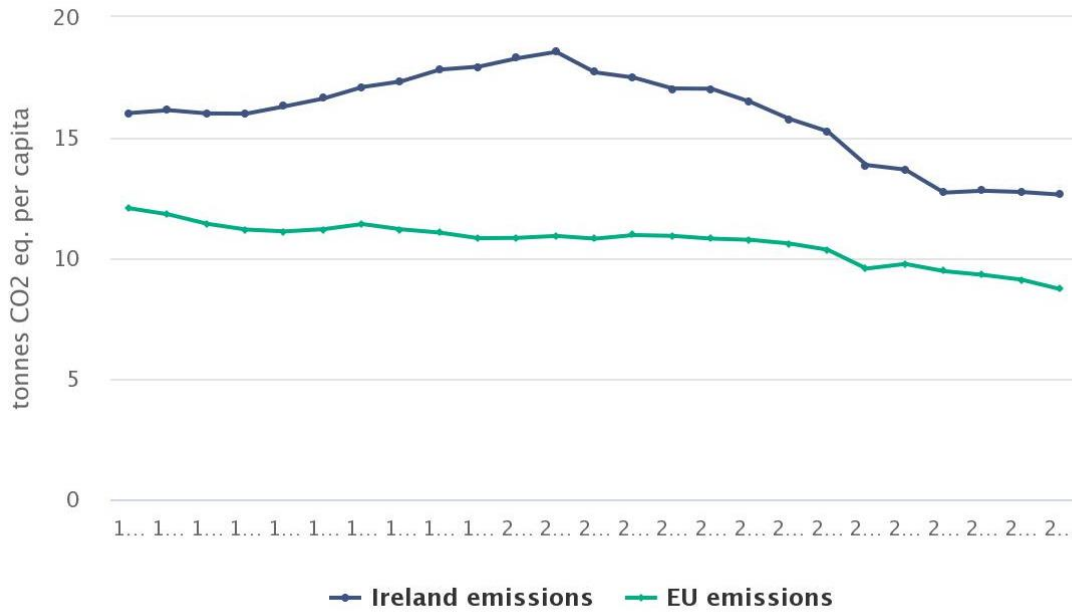
1.9.2.1 Transport - Greenhouse Gases

Greenhouse gases are those gases which contribute to the global warming or greenhouse effect. Carbon Dioxide is the most important of the greenhouse gases as it is currently responsible for just over 60% of the greenhouse effect.

⁴ National Adaptation Framework – Planning for a Climate Resilient Ireland, DoCCA&E, 2018

⁵ Our Sustainable Future – A Framework for Sustainable Development for Ireland, DoECLG

⁶ www.cso.ie

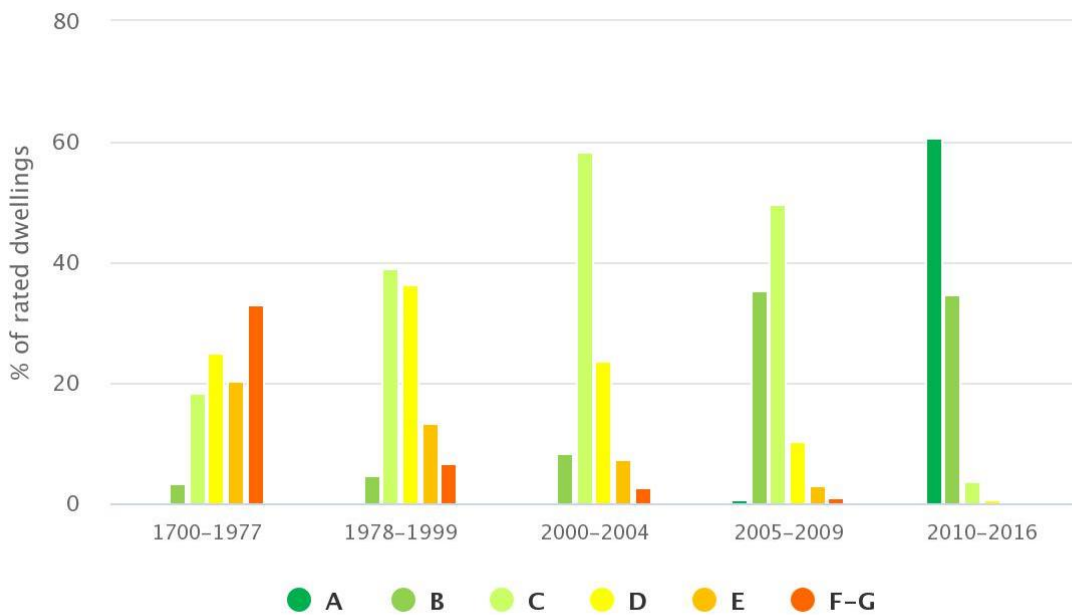


Source: Eurostat

Figure 1.3 – Figure 4.3 Ireland and EU: Greenhouse gas emissions per capita 1990-2014

Greenhouse gas emissions per capita in Ireland have been falling but remain higher than the EU average of 8.7 tonnes per capita at 12.6 tonnes per capita in 2014.

1.9.2.2 Build Fabric



Source: CSO

Figure 1.4 – Figure 4.5 Ireland Domestic building energy ratings 2009-2016

Of the 17,831 dwellings built between 2010 and 2016 which had a building energy rating audit, 61% received an A rating. This contrasts with 1% of dwellings built between 2005 and 2009 with an A rating.

1.9.3 Climate Change Mitigation

This section provides an overview of the measures proposed and activities encouraged by the Project to reduce or avoid greenhouse gas emissions and its capacity to adapt to the impacts of Climate Change.

1.9.3.1 Transport

- Facilitating modal shift to more sustainable transport options, including walking and cycling is a key element in promoting better traffic management and climate change.
- The location of the application site within walking distance of the Drogheda Train Station and existing bus services encourage use of public transport over the private car.
- The layout of the proposed development is DMURS compliant, prioritising pedestrians and cyclists. The proximity of neighbourhood uses and employment uses to housing reduces carbon emissions due to consumer trips to these uses.
- A Mobility Management Plan has been prepared by Waterman Moylan Consulting Engineers which will be applied by the Management Company to further encourage a modal shift towards more sustainable modes of transport and reduce or avoid carbon emissions from transport as a result of the Project.
- Careful location of car parking spaces at basement/undercroft levels for the apartments, which are at a remove but not remote from the apartments they serve. This will discourage use of the private car as a 'first option' transport decision for residents.

1.9.3.2 Built Fabric

- Designs that will be more resilient to expected risks. Building Regulations Part L – Conservation of Fuel and Energy in Buildings is in place to limit the energy use and carbon dioxide emissions from a building as far as is practicable and requires an energy performance and carbon dioxide emissions performance that is 60% better than the 2005 Part L requirements. This is recognised as an advanced performance requirements for buildings (p.71).
- Storm Water Drainage systems design to accommodate a 1:100 year storm event accounting for a 20% increase with Climate.
- Buildings designed for solar gain with a high level of dual aspect units providing natural ventilation.
- A Building life-cycle report accompanies this application.
- The development proposes neighbourhood uses as part of Phase 1 of the proposed development, encouraging walking/cycling to make use of these facilities rather than use of the private car by providing more direct routes for pedestrians/cyclists than by car.

1.9.3.3 Biodiversity

- The creation of high quality public open spaces and landscape plan with planting informed by the All-Ireland Pollinator Plan and native hedgerows and tree planting.
- Mitigation measures discussed in Chapter 5 'Biodiversity' will protect Birds and potential Bat Roosts.

1.9.4 Climate Change Adaptions

As recognised in the recently adopted 'Local Authority Adaptation Strategy Development Guidelines (December 2018), "*Adaptation is a societal issue and is the start of an in-depth long term process to ensure national and local scale climate resilience that will likely include a degree of social and systemic transformation*". Delivering adaptation actions encompasses taking a wide range of actions that can be classified as soft, green or grey.

Soft adaptation actions involve alterations in behaviour, regulation or systems of management including land-use planning policy. Reducing the effects of climate change through settlement and travel patterns is identified as a key policy area for the Eastern and Midland Region (p.170). The proposed development is ideally located prompt behavioural change through tools like the Mobility Management Plan.

Green adaptation actions are those that seek to use ecological properties to enhance the resilience of human and natural systems in the face of climate change. The creation of green spaces within the proposed development is an example of green adaptation as it will assist in regulating urban heat effects in the future.

Grey adaptation typically involves technical or engineering-orientated responses to climatic impacts. For example, the proposed drainage system includes allowance for climate change and promotes sustainable urban drainage systems. Adaptive capacity has been built into the Project through alternative measures such as heating systems and provision of electric vehicle charging points.

1.9.4.1 Planning Policy and Adaptation Implementation

The Guidelines recognise that the statutory planning process offers considerable potential as vehicles of adaptation implementation. There are clear synergies between plan making and the implementation of preferred adaptation actions. As such the Guidelines recommend the local authority adaptation strategy should inform development plans and other statutory plans of the local government. The local plans affecting the application site have not been reviewed and an Adaptation Strategy has not yet been undertaken for Louth. However, the same ethos is contained within the new National and Regional Planning Guidelines as outlined overleaf-

National Planning Framework (NPF)

According to the NPR, Development sprawl at every settlement level in Ireland has manifested as scattered development, 'leapfrogging', continuous suburbs and linear patterns of strip or ribbon development. This type of development has made it costly and often unfeasible for the State to align and invest in infrastructure delivery where it cannot be justified. *It has also hampered effective responses to climate change, compounded issues such as congestion and pollution, increased commuting times and has had an overall negative impact on people's health and well-being (S.6.6).*

The vision is that Ireland's Future Homes will: be located in places that can support sustainable development - places which support growth, innovation and the efficient provision of infrastructure, are accessible to a range of local services, can encourage the use of public transport, walking and cycling, and help tackle climate change; (p.92).

It is a National Policy Objective (33) to "Prioritise the provision of new homes at locations that can support sustainable development and at an appropriate scale of provision relative to location".

The proposed development is fully in keeping with the NPF and supports sustainable development in terms of access to public transport, location of local services and the promotion of walking and cycling. In this way, the proposed development will assist in tackling climate change.

Regional Spatial and Economic Strategy for the Eastern and Midlands (2019) (RSES)

Section 7.9 of the RSES states how observations show that Ireland's climate is changing in terms of sea level rise, higher average temperatures, changes in precipitation patterns, more frequent weather extremes, the spread of invasive alien species and increased risk of wild fires (para. 7.9), as illustrated by figure 1.2 above from the National Adaptation Framework. It is recognised by the RSES that there is a need for appropriate adaptation or climate proofing measures to ensure a comprehensive response to the challenge of climate change in the region. The priority policy areas identified are energy generation, the built environment and transport. Five Regional Policy objectives have been included within the RSES relating specifically to Climate Change (p.171). It is intended that within two years of the adoption of the RSES, an assessment of transport emissions in the Region will be carried out, forecasted and analyses with emissions reductions targets agreed.

The proposed development follows Key Policy to "Reduce the effects of climate change through settlement and travel patterns, energy use, waste and protection of green infrastructure" (p.170) as demonstrated by this EIAR.

APPENDIX 1.1

Site Location Map

APPENDIX 1.2

Site Layout Plan