

D C W N E Y

ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIAR)

KILNAHUE SHD

Proposed Strategic Housing Development

**on Lands at Kilnahue & Gorey Hill,
Carnew Road & Kilnahue Lane,
Gorey, Co. Wexford**

Applicant: Gerard Gannon Properties

March 2022

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NON-TECHNICAL SUMMARY

PREFACE

In this instance, given the application site extends to c. 19.17 hectares within what can be considered a built-up area, an EIA is required, and an Environmental Impact Assessment Report has been prepared to accompany the planning application, in accordance with Class 10(b)(iv):

Class 10(b)(iv): “Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere”.

This Environmental Impact Assessment Report (EIAR) has been prepared by the study outlined in the table below.

Name	Role
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<p><u>Connolly Architects</u></p> <p>(Michael Connolly FRIAI)</p>	<p>Project Architect & Accredited in Conservation Grade 3</p> <p>Preparation of following EIAR chapters:</p> <ul style="list-style-type: none"> ▪ <i>Description of Development & Alternatives Considered</i> ▪ <i>Mitigation Measures</i>
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<p><u>OPENFIELD Ecological Services</u></p> <p>(Padraic Fogarty, Ecologist, MSc in EclA)</p>	<p>Preparation of following EIAR chapter:</p> <ul style="list-style-type: none"> ▪ <i>Biodiversity</i> ▪ <i>Mitigation Measures</i>
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DESCRIPTION OF PROJECT

Gannon Properties are applying to An Bord Pleanála for planning permission for a proposed Strategic Housing Development on lands at Kilnahue & Gorey Hill, Carnew Road & Kilnahue Lane, Gorey, County Wexford. The application site is located to the south-west of Gorey Town Centre between the Kilnahue Road and Carnew Road (R725) from the town. The site lies within open undulating fields and is bounded to the south by the regional road R725 and some residential development, to the east by pasture fields behind residential and commercial development, to the north and northeast by a local road linking Ballyrahan and Gorey town, and to the west by open crop fields and beyond that some modern farmsteads and dwellings.

With an approximate area of 19.17 hectares, the majority of lands subject to this application are zoned for residential with its north-western portion zoned for open space. The site is bounded by Kilnahue Lane to the north, the eastern boundary abuts a number of greenfield lands that abut one-off residential dwellings which front Carnew Road (R725). A section of the application site fronts the Carnew Road to the south-west of the application site. Agricultural farmland bounds the subject site along its western perimeter boundary.

The proposed development is described in full in Chapter 2.0 of this Environmental Impact Assessment Report but in summary consists of the following:

“A proposed Strategic Housing Development consisting of the demolition of the dilapidated structures on site and the construction of 421 no. residential units comprising duplex units, apartment units, and houses, all with associated car parking; a creche facility with outdoor play areas, 2 no. retail units and 2 no. community rooms, all with associated car parking; a new vehicular access onto Carnew Road (R725) and associated road upgrade works, new vehicular accesses onto Kilnahue Lane (L10112) and associated road upgrade works; landscaping including neighbourhood park, pocket parks, a playground and multi-purpose sports court; boundary treatments; public lighting; and all associated engineering and site works necessary to facilitate the development including proposed upgrade works to existing engineering infrastructure on Carnew Road, Kilnahue Lane, Main Street and Esmonde Street”.

ALTERNATIVES CONSIDERED

The Wexford Development Plan 2013-2019 and Gorey Town & Environs Local Area Plan 2017-2023 set out the determining factors for this planning application. With constraints such as site topography limiting the developable quantum of lands, density, provision for community infrastructure and amenities, and impact on trees and hedgerows, there was little scope to explore designs which were significantly different to what is being proposed in this planning application.

However, a number of alternatives to the proposed design of the various residential blocks were considered during the course of pre-planning consultation and numerous design team meetings, as well as the internal road layout and provision for community infrastructure and amenities. The design of the proposed project has evolved throughout the consultation process which is set out in full in Chapter 2.0 of this EIAR. The design of the various blocks, overall layout of the proposed scheme, and provision of more ancillary uses were amended as a result of extensive consultation and feedback with

the relevant departments of Wexford County Council and with An Bord Pleanála. The final application design for the site proposes a legible and permeable scheme which ensures connectivity within the subject lands and the surrounding area. This layout allows for the development of the lands at an appropriate density and scale and in line with National, Regional and Local Planning policy.

A “Do Nothing” scenario would not be consistent with the land use zoning pertaining to the lands and the objectives of the County Development Plan and Gorey & Environs LAP to facilitate a new residential development on the subject lands as part of a wider development of Gorey. Given the subject site’s location within Gorey as well as access to public transport and mobility, failure to these lands would significantly impair the quality of the urban landscape and viability for a mix of sustainable uses and amenities for existing and future residents.

As such, it is considered that the “Do Nothing” scenario is not a suitable alternative option for the subject lands, and would also not be consistent with national planning policy as set out in the National Planning Framework, Regional Spatial Economic Strategy, and Urban Development and Building Height Guidelines.

BASELINE SCENARIO

The baseline scenario including a description of the current receiving environment has been considered as part of this EIAR through the collection and collation of data through tests, site visits, desktop reviews, etc., including analytical data for traffic, noise levels, surface water quality, etc. A description of the existing environment is presented in each relevant section for the various environmental chapters.

The application site is located on lands at Kilnahue and Gorey Hill, Carnew Road & Kilnahue Lane, Gorey, County Wexford, situated to the south-west of Gorey Town Centre between Kilnahue Lane and Carnew Road (R725). The lands are generally bounded by Kilnahue Lane to the north, the eastern boundary abuts a number of greenfield lands that abut one-off residential dwellings which front Carnew Road (R725). A section of the application site fronts the Carnew Road to the south-west of the application site. Agricultural farmland bounds the subject site along its western perimeter boundary.

LAND-USE PLANNING IMPACTS

Under the current Gorey & Environs LAP, the majority of the subject lands are zoned as “R - Residential” zoning objective with a portion of the lands located along the north-eastern boundary of the site zoned as “OS - Open Space & Amenity” zoning objective. Outlined in the LAP, these zoning objectives seek the following:

“R - Residential Zoning Objective: To protect and enhance the residential amenity of existing and developed communities and to provide for new residential development, associated residential services and community facilities.

OS - Open Space & Amenity Zoning Objective: To protect and provide for recreation, open space and amenity areas.”

The uses proposed as part of this development are permitted under the pertaining zoning objectives. The proposed development is in accordance with relevant national, regional, and local planning policy documents.

CHAPTER 4 - POPULATION AND HUMAN HEALTH

This section of the EIAR has been prepared by Downey. The subject site and proposed development were examined in terms of its impact on the human environment in the general area. The proposed development will have a positive impact on population, in that they will cater for predicted future increase in population for the Gorey town.

Methodology

The assessment was carried out by way of site visits and desktop research of the demographic profile of the area, assessment of community and social infrastructure facilities, employment, educational and commercial facilities in the area.

Receiving Environment

The baseline assessment has found that the population of the area has increased over the census period 2011-2016 by approximately 8.5% (up to 10,446 persons). This is considerably higher than the growth rate experienced in the overall County with a recorded growth rate of +3.2% over the same period. The Land use and settlement pattern consists generally of a suburban area. The surrounding built environment is characterised by residential developments with a mix of house types all of which have resulted in varying building heights and forms within the area. According to the CSO census, the size of households within the catchment area averages at 2.7 persons, which is in line with Wexford and the national average as a whole. This has been stable between the intercensal periods of 2011-2016.

Potential Impact of Proposal

Construction Phase

The construction of this project, like any project, has potential to give rise to an impact on health and safety of human beings if construction activities are not managed appropriately.

Operation Phase

The proposed development will see an increase in population from the operation phase of the development. This will support an increase in economic activity in the area and employment. This will take place close to people's homes and public transportation. This is seen as a positive impact.

The development will generate an increase in traffic and noise, which will have a slight and permanent impact on human health.

Remedial/Mitigation Measures

Construction Phase

Measures to address such health and safety considerations will be addressed in the Construction Management Plan, including Construction Traffic Management Plan for the development, which shall be agreed with the Planning Authority subject to a grant of permission being obtained.

Operation Phase

No mitigation or remedial measures are required in relation to population or human health during the operational phase of the development.

Predicated Impact of Proposal

Construction Phase

The development will have a positive and temporary impact on employment during the construction phase, providing significant construction sector and related employment over the construction period of the development in the construction phase directly.

Operation Phase

The development will have a positive and long-term impact on community and recreational facilities in that it will provide areas of green amenity space and will contribute to the critical mass needed to support community and recreational facilities in the wider Gorey area.

There will be a change in the density of the land use pattern of the site although the use itself is currently residential. This is seen to be a neutral impact.

Monitoring

In terms of population and human health, measures to avoid negative impacts have been a key consideration in the design evolution of the buildings and overall layout of the proposed project. Conditions will be attached to any grant of planning permission to ensure compliance in this regard. Building Regulations will also be adhered to during the construction phase to ensure a fully compliant development is constructed. Health and Safety requirements, which are site specific to the proposed project, will be carried out by the Project Manager on site. Impacts from Air Quality, Noise and Vibration, Climate, and Traffic and Transport and monitoring measures in this regard are addressed in the relevant chapters of this EIAR.

CHAPTER 5 - BIODIVERSITY

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 series of site surveys. Site surveys were carried out in April 2017, September 2020, January 2021 and June 2021. April and September are within the optimal season for surveying habitats while April and January are optimal for surveying badgers and otters. April and June are optimal for surveying breeding birds. Dedicated bat and badger surveys were carried out by Brian Keeley within the optimal period for such surveys.

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. There are no alien invasive plant species as listed on Schedule 3 of SI No. 477 of 2011. The site can be described as agricultural fields with traditional hedgerow and earth bank boundaries. A disused building is now surrounded with scrub. Hedgerows and earth banks were assessed as a combination of 'higher significance' and 'lower significance' using methodology from the Heritage Council. There are no water courses on the site but the lands are within the catchment of the Owenavorrhag River, which is of salmonid status and which drains to the Irish Sea.

The site contains suitable roost locations for bats in the old building however no roosts were found. At least three species were recorded using the area for foraging and/or commuting. There are no badger setts on the site. There is no suitable habitat on the site for otters or fish. Breeding bird surveys in 2017 and 2021 found that a number of common and widespread species are nesting on the site. While yellowhammer (a species of high conservation concern) was noted in 2017, this was not recorded in other surveys, including the nesting survey of 2021.

It is estimated that 790m of 'lower significance' hedgerow and earth banks and 1,043m of 'higher significance' hedgerow are to be removed along with 400m² of scrub. This was assessed as a significant negative impact on biodiversity and so compensatory habitat is provided in the landscaping scheme. Good site management practices will ensure that pollution to water courses does not occur during the construction phase. Surface water will be attenuated on site so that there will be a positive impact to the quality of the discharge during the operational phase.

Additional landscaping will compensate for the loss of habitat that will occur and this will include over 20,000m² of new native woodlands, pocket parks and meadow areas. Lighting was reviewed with the bat ecologist to ensure that negative effects are minimised. With the suggested mitigation in place, the ecological impacts by this proposed development will not be significant over the medium- to long-term.

A Screening Report for Appropriate Assessment concluded that significant effects to Natura 2000 sites are not likely to arise. While the River Slaney Valley SAC can be found c.1.2km to the west this lies in a separate hydrological catchment to the development site and so there is no pathway for effects to arise. There are no Natura 2000 sites within the zone of influence of this project.

CHAPTER 6 - LAND AND SOILS

Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) provides an assessment of the impact that the proposed residential development at a site off Kilnahue Lane, Gorey, Co. Wexford will have on the surrounding soil and geology in the vicinity of the site. It also sets out mitigation and remedial measures and methods of monitoring once the development is operational. It also sets out mitigation and remedial measures and methods of monitoring while the development is operational. A full description of the development can be found in Chapter 2 of this EIAR.

Assessment Methodology

A desktop study to classify the geological features related to the site was undertaken. This information was supplemented by a review of geotechnical Site Investigations carried out within the site by Site Investigations Ltd. in June 2021. This ground investigation assessed the soil, rock and groundwater conditions across the site and included trial pits with dynamic probes, soakaway tests and laboratory testing of representative soil samples.

Characteristics of Proposed Development

The site is bounded by residential and farming and schools to the east side on Kilnahue Lane. It has two proposed access points, housing a creche and community facilities. The proposed development with respect to soils and geology, includes excavation of basements and foundations, excavation of drainage sewers and utilities, minor regrading and landscaping and disposal of any surplus excavated soils including any contaminated material.

Potential Impacts

The removal of topsoil during earthworks and the construction of roads, services and buildings, in particular basements and foundations, will expose subsoil to weathering and may result in the erosion of soils during adverse weather conditions. Surface water runoff from the surface of the excavated areas may result in silt discharges local stream. Excavations for foundations, remaining roadworks and services will result in a surplus of subsoil. Surplus subsoil will be used in fill areas where applicable.

Dust from the site and from soil spillages on the existing road network around the site may be problematic, especially during dry conditions. Accidental oil or diesel spillages from construction plant and equipment, in particular at refuelling areas, may result in oil contamination of the soils and underlying geological structures.

During the operational stage of the development, it is not envisaged that there will be any ongoing impacts on the underlying soil as a result of the proposed development.

Mitigation Measures (Ameliorative, Remedial or Reductive Measures)

To reduce the quantity of soil to be removed from or imported into the site, the floor levels of the proposed buildings and roads are designed to match existing levels as closely as is feasible, to minimise the cut and fill balance. The number of vehicle movements offsite will be minimised by this optimisation.

Surplus subsoil and rock that may be required to be removed from site will be deposited in approved fill areas or to an approved waste disposal facility. Surplus subsoil will be stockpiled on site, in such a manner as to avoid contamination with builders' waste materials, etc., and so as to preserve the materials for future use as clean fill. A Construction Management Plan will need to include protocols for soil removal and should be implemented by the development's main contractor during the construction stage.

Soil samples taken from the site during the site investigations showed no evidence of contamination. However, any contaminated soils that are encountered during the works will be excavated and

disposed of off-site in accordance with the Waste Management Acts, 1998-2006, and associated regulations and guidance provided in Guidelines for the Management of Waste from National Road Construction Projects published by the National Roads Authority in 2008.

In the case of topsoil, careful planning and on-site storage can ensure that this resource is reused on-site as much as possible. Any surplus of soil not reused on site can be sold. However, topsoil is quite sensitive and can be rendered useless if not stored and cared for properly. It is therefore important that topsoil is kept completely separate from all other construction waste, as any cross-contamination of the topsoil can render it useless for reuse.

It is important to ensure that topsoil is protected from all kinds of vehicle damage and kept away from site-track, delivery vehicle turning areas and site plant and vehicle storage areas.

If topsoil is stored in piles of greater than two metres in height, the soil matrix (internal structure) can be damaged beyond repair. It should also be kept as dry as possible and used as soon as possible to reduce any deterioration through lengthy storage and excess moving around the site.

Records of topsoil storage, movements and transfer from site will be kept by the C&D Waste Manager.

The provision of wheel wash facilities at the construction entrances to the development will minimise the amount of soils deposited on the surrounding road network. The adjoining road network will be cleaned on a regular basis, as required, to prevent the build-up of soils from the development site on the existing public roads. Dampening down measures with water sprays will be implemented during periods of dry weather to reduce dust levels arising from the development works.

Measures will be implemented throughout the construction stage to prevent contamination of the soil and adjacent watercourses from oil and petrol leakages. Suitable bunded areas will be installed for oil and petrol storage tanks. Designated fuel filling points will be put in place with appropriate oil and petrol interceptors to provide protection from accidental spills. Refuelling will be restricted to these allocated re-fuelling areas. This area is to be an impermeable bunded area designed to contain 110% of the volume of fuel stored.

During excavation works, temporary sumps will be used to collect any surface water run-off thereby avoiding of standing water within the excavations. If groundwater is encountered during excavations, mechanical pumps will be required to remove the groundwater from sumps. Sumps should be carefully located and constructed to ensure that groundwater is efficiently removed from excavations and trenches.

Silt traps, silt fences and tailing ponds will need to be provided by the contractor where necessary to prevent silts and soils being washed away by heavy rains during the course of the construction stage. Surface water runoff and water pumped from the excavation works will be discharged via a silt trap / settlement pond to the existing foul drainage network. Straw bales will be used at the outfall to filter surface water to remove contaminants.

Appropriate storage and bunding measures will be implemented throughout the construction stage to prevent contamination of the soil and groundwater from oil and petrol leakage from site plant. Refuelling will be restricted to allocated re-fuelling areas. This area is to be an impermeable bunded area designed to contain 110% of the volume of fuel stored.

After implementation of the above measures, the proposed development will not give rise to any significant long term adverse impact. Moderate negative impacts during the construction stage will be short term only in duration.

A Construction Management Plan, Traffic Management Plan and Waste Management Plan will be implemented by the contractor during the construction stage to control the above remedial measures.

On completion of the construction phase and following replacement of topsoil, a planting programme will commence to prevent soil erosion. SuDS and filtration devices are proposed to be provided as part of the development. These will help to remove pollutants from rainwater runoff. The SuDS proposals will also encourage infiltration of surface water to the ground.

Residual Impact

With the protective measures noted above in place during excavation works, any potential impacts on soils and geology in the area will not have significant adverse impacts, and no significant adverse impacts on the soils and geology of the subject lands are envisaged.

On completion of the construction phase and following replacement of topsoil and implementation of a planting programme, no further impacts on the soil are envisaged. SuDS measures, including permeable paving, bioretention tree pits and open areas with low level planting, will assist with treating surface water runoff while replenishing the natural ground water table. No significant adverse impacts are predicted on soils or geology.

Monitoring

Monitoring during the construction phase is recommended, in particular in relation to the following:

- Adequate protection of topsoil stockpiled for reuse.
- Adequate protection from contamination of soils for removal.
- Monitoring of surface water discharging to existing watercourses, ditches and the existing surface water drainage system.
- Monitoring cleanliness of the adjoining road network.
- Monitoring measures for prevention of oil and petrol spillages.
- Dust control by dampening down measures close to the boundaries of the site, when required due to unusually dry weather conditions.

During the operational phase, the surface water network (drains, gullies, manholes, AJs, SuDS devices, attenuation system) will need to be regularly maintained and where required cleaned out. A suitable maintenance regime of inspecting and cleaning should be incorporated into the safety file/maintenance manual for the development.

Reinstatement

Trenches opened during construction will be backfilled with subsoil to reinstate existing ground levels. Upon completion no impact is foreseen.

CHAPTER 7 - WATER

Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) provides an assessment of the impact that the proposed mixed-use developments at Kilnahue Lane, Gorey will have on the water supply network in the vicinity of the site. It also sets out mitigation and remedial measures and methods of monitoring while the development is operational. A full description of the development can be found in Chapter 2 of this EIAR. This chapter was completed by Waterman Moylan Consulting Engineers.

Assessment Methodology

Research for this section included a review of Ordnance Survey and Topographical surveys of the subject site and surrounding area and a review of the existing surface water layout from Irish Water / Wexford County Council records for the area.

Receiving Environment

There is an existing 100mm watermain in Gorey Hill/Kilnahue Lane, serving the school on the northern side of the road, and there is a 4" (c.100mm) watermain in Carnew Road. There is an existing 150mm diameter public foul water sewer in Carnew Road, south-east of the site. This sewer increases in diameter to 225mm approximately 800m east of the site entrance, at Westhill Park. There is a 225mm diameter foul sewer draining eastwards from Creagh College, which drains eastwards along Creagh College Lane, (a new 2m wide pedestrian access along the southern boundary of Gaelscoil Moshíológ), connecting Kilnahue Lane to the Creagh College roundabout. The proposed development site is a greenfield site. Topographic survey data shows that the site falls generally from west to the east, from a high point of approximately 133.5m at the west of the site to a low point of approximately 101.5m at the east. There is a surface water ditch at the eastern boundary of the site, at approximately 97.50m OD Malin. This ditch drains in a northerly direction, discharging to the Banogue River.

Mitigation Measures (Ameliorative, Remedial or Reductive Measures)

A method statement setting out in detail the procedures to be used when working in the vicinity of existing watermains will be produced by the contractor for any construction works within the vicinity of watermains and for roads or services crossing watermains. All watermains will be cleaned and tested in accordance with Irish Water guidelines prior to connection to the public watermain. All connections to the public watermain will be carried out by, or under the supervision of, Irish Water. Potential negative impacts during construction stage will be short term only.

Water meters will be installed at connection points, with locations to be agreed and approved by Irish Water, and these meters will be linked to Irish Water's monitoring system by telemetry. These meters will facilitate the early detection of unusual water usage in the network and identify potential leaks in the system. All plumbing fixtures and fittings and sanitary wear to be installed within the development should be to the current best practice for water consumption to minimise future water usage. It is not envisaged that any further remedial or reductive measures will be necessary on completion.

In order to reduce the risk of defective or leaking foul sewers, the following remedial measures will be implemented: -

- All new foul sewers will be tested by means of an approved air test during the construction stage in accordance with Irish Waters Code of Practice and Standard Details.
- All private drainage will be inspected and signed off by the design Engineer in accordance with the Building Regulations Part H and BCAR requirements.
- Foul sewers will be surveyed by CCTV to identify possible physical defects.
- The connection of the new foul sewers to the public sewer will be carried out under the supervision of Irish Water and will be checked prior to commissioning.
- Prior to commencement of excavations in public areas, all utilities and public services will be identified and checked, to ensure that adequate protection measures are implemented during the construction stage.

All foul drains will be tested and surveyed prior to connection to the public sewers to minimise the risk of uncontrolled ground water penetration or leakage of the foul water to ground water on the site. Otherwise, no remedial or reductive measures are deemed to be necessary after completion of the proposed development, other than normal maintenance of the foul sewer system.

The contractor will prepare and implement a Construction Management Plan which will outline the requirements for the storage and handling of fuel, including the refuelling of vehicles in designated refuelling zones to minimise the risk of spillages, and the impact of spillages should they occur.

The Construction Management Plan will also utilise sedimentation controls, including silt traps, tailings ponds and silt fences during the construction period.

All private drainage will be inspected and signed off by the design Engineer in accordance with the Building Regulations Part H and Building Control (Amendment) Regulations (BCAR) requirements. This will reduce the possibility of any cross connections being constructed.

The proposed flow control device is to be limited to the greenfield equivalent runoff rate. The net runoff volume from the site will therefore remain unchanged. There is a possibility of some foul water ingress into the surface water drainage system due to poor workmanship. Any such cross connections could result in pollution of the surface water network.

Surface water will be attenuated privately and will discharge to the public network at a controlled rate limited to the greenfield equivalent runoff rate.

In addition, the SuDS devices outlined in Section 8.4.4 will reduce and slow down the rate of surface water runoff from the site. This will minimise peak flows in the downstream system during major storm events. Gullies and the flow control devices shall be regularly maintained to avoid blockages.

The SuDS treatment train will also treat the surface water discharging to the public network, removing pollutants from the surface water runoff. Maintenance of these SuDS devices will be required to ensure that they continue to treat the surface water as designed.

Residual Impact

No significant adverse impacts are expected to arise during the construction stage if the proposed remedial and reductive measures are implemented.

Monitoring

Monitoring will be implemented on a site-by-site basis in line with best practice standards. Water usage and potential leakage will be monitored by Irish Water using the water meters which will be installed on the supply pipes so that the development can be monitored in sections. The location of these meters will be agreed with Irish Water and the meters will be linked to Irish Water's monitoring system via telemetry. The surface water network (drains, gullies, manholes, AJs, SuDS devices, attenuation systems) will need to be regularly maintained and where required cleaned out. A suitable maintenance regime of inspecting and cleaning shall be incorporated into the safety file/maintenance manual for the development.

Reinstatement

Any existing roads and footpaths that are opened to facilitate water supply, foul water drainage and surface water drainage connections will be reinstated.

CHAPTER 8 – AIR QUALITY

The assessment identified the existing baseline levels in the area of the proposed development by an evaluation of EPA monitoring data. The local monitoring data indicates the EPA's air quality index for health (AQIH) typically falls into the category of index 1 and on occasion fluctuates to index 2, both in the band of 'Good' air quality in terms of health for people in the vicinity. The national 2019-2017 levels of pollutants show the air quality parameter concentrations are all well below the National Air Quality Standards Regulations limit values. It can be seen that the existing baseline air quality at the site locality can be characterised as being good with no extended exceedances of the limit values. The air quality impact was considered for each distinct stage, construction phase and operational phase.

The impact on air quality during the construction phase is predicted to be from construction dust emissions. The impact at neighbouring sensitive receptors was determined by a theoretic assessment of dust soiling. It was assessed that prior to mitigation, the risk of dust impacts as a result of the proposed development is a 'medium risk' for potential dust soiling impacts and a 'low risk' for potential human health impacts. Standard mitigation measures outlined in Section 12.5 along with the dust management plan outlined in Appendix 8.1 would be implemented to control emissions during construction. Provided these measures are adhered to, the air quality impacts during the construction phase will not be significant.

The impact of the development during the operational phase on air quality was determined by an assessment using the DMRB screening model predicting pollutant concentrations and is in line with what would be expected from a modern residential development. Results showed an expected small increase in annual NO₂, PM₁₀, benzene and CO but each parameter would still remain well below the limit values for EU regulations. In the context of significance outlined in relevant guidelines, the

impacts have been defined as negligible. This predicted increase above the current existing baseline would not result in a perceptible change in the local air quality environment.

CHAPTER 9 – NOISE & VIBRATION

The impact or increase in noise levels, mainly by increased traffic noise at the new proposed site's R725 junction entrance and at the proposed site's Gorey Hill Road junction are at worst case deemed a 'slight' impact based on the predicted calculation methodology of BS 5228-1:2009+A1: 2014 and are in line with general noise impacts of new developments.

However, in actual terms when the new government's climate action plan is implemented, the noise levels including the new proposed development will reduce over the current background noise levels due to the fact that petrol & diesel cars will be phased out and replaced by more quiet electrical cars over the next decade during which the development will be constructed. It is anticipated that construction vibration levels will only have minor temporary increases and that any increase in operational vibration due to the new development is deemed not to have any noticeable impacts on the overall development.

CHAPTER 10 – CLIMATE

Any new development, until we manage to construct at zero emissions, will add to CO₂ / greenhouse gas emissions in some degree however it is key that at this point we need to lower the impact to a bear minimum. To achieve this CO₂ emission reduction measures are applied across several elements of the construction phase and operational phase. The construction phase is short and its effect on CO₂ emissions over the life cycle of a building (60 years) is very limited. Reduction measures on the operational phase are very effective as a result of the 60 year life cycle which are made up of CO₂ emissions from transport and building energy (space heating & hot-water heating). Significant CO₂ reductions (72%) on the space heating and hot-water energy element together with CO₂ reductions (13%) on transport have been achieved in the operational phase by implementing the reduction measures lowering the impacts to a bear minimum. Comparing the overall project's total combined general annual CO₂ emissions of 0.00125 Mt-CO₂ with our National (EPA) CO₂ emissions of 60 Mt-CO₂/year in 2022 and a projected 47.5 Mt-CO₂/year in 2030 we note the actual impact to be in the order of 0.00215% which is deemed to be imperceptible.

CHAPTER 11 – LANDSCAPE AND VISUAL IMPACT

The proposed development shall be an extension of the expanding town of Gorey to the east. Although on a sloping site, an opportunity to develop a distinctive residential development was presented to the design team. The buildings had to be presented on site in a terraced fashion and therefore provided scope to develop pocket parks, linear open spaces. It was also acknowledged that much of the internal hedgerows shall be removed, the response to this was to create a diverse natural landscape within a suburban – urban setting.

Despite the proposed tree planting along the roads, it is proposed to plant an urban woodland around the units and in the open spaces creating new habitats and landscape form. The net effect is to create a new suburban - urban residential development set in among trees and pollinator plants.

The large open space to the north provides an opportunity to provide a new habitat that may be used for amenity. The proposed wildflower meadows present an opportunity to increase and reintroduce the biodiversity into the locality. These areas may be used for amenity, both active and recreational, with extensive paths and seating areas. This concept is carried throughout the proposed development, into the pocket parks, around the units, car parking. The linking of all the spaces shall create a total landscape connected to the existing surrounding hedgerows and landscape.

Overall, the proposed houses shall be set into a landscape that shall be ever changing with the seasons. It will be a unique development as all the opens spaces have been developed with biodiversity and habitat renewal in mind. The amenity value was developed by provided by seating, paths, play space and informal kickabouts set into this new urban – suburban landscape of urban forest, tree planting, pocket, linear and large parks.

The new landscape shall be unique and shall invite and encourage residents to live and rear their families in a new environment that shall be an extension of Gorey town.

CHAPTER 12 – TRAFFIC AND TRANSPORT

This chapter of the Environmental Impact Assessment Report (EIAR) provides an assessment of the impact that the proposed developments site at Kilnahue Lane, Gorey, will have on traffic and transportation. A full description of the development can be found in Chapter 2: Description of Proposed Development of this EIAR.

The following methodology has been adopted for this assessment:

- Review of the relevant available information including, where available Development Plans and Local Area Plans, existing traffic information and other relevant studies;
- Site visit to gain an understanding of the site access and observe the existing traffic situation and receiving environment;
- Description of the overall proposed development;
- Detailed estimation of the transport demand to be generated by the development. The morning and evening peak times will be addressed as well as an estimation of the construction stage traffic and the Annual Average Daily Traffic (AADT), and
- Assessment of the impact of generated traffic on local junctions, car parking requirements and accessibility of the site by sustainable modes including walking, cycling and public transport.

Baseline conditions, providing background information for the site in order to determine significance of any traffic implications, were assessed. Consideration was also given to the existing accessibility of the site by sustainable modes of transport.

Vehicular access to the subject development is proposed via one new priority-controlled T-junction on R725 Carnew Road to the south of the site, and via two new priority-controlled T-junctions on Kilnahue Lane to the north of the site. It is estimated that the proposed overall development will generate a total of 261 peak hour car trips during the AM (96 inbound and 165 outbound) and a total of 153 car trips during the PM peak hour (75 inbound and 78 outbound). The following three junctions were modelled as part of the subject assessment:

- Site 1 (Existing Priority-controlled T-junction): R725 Carnew Road / Kilnahue Lane
- Site 2 (Existing Priority-controlled T-junction): Kilnahue Lane / Access Road to School Site
- Site 3 (Proposed Priority-controlled T-junction): R725 Carnew Road / Proposed Site Access Road

Sites 1 and 2 have been modelled based on its current configurations and the results indicate that both junctions are currently working within capacity during the AM and PM peak hours and will continue to do so for the opening year of 2024 and the future assessment year of 2039 + Development.

Site 3 has been modelled based on its proposed configuration and the results indicate that this junction would operate well within capacity for the future assessment year of 2039 + Development.

Therefore, it can be concluded that there is sufficient capacity in the surrounding road network to facilitate the proposed strategic housing development.

Mitigation Measures

A Preliminary Construction, Demolition and Waste Management Plan (CDWMP) has been prepared by Waterman Moylan for the subject development in order to provide guidance on how to minimise the potential impact of the construction stage of the proposed development on the safety and amenity of other users of the public road. The CDWMP, which accompanies the documentation package under a separate cover, considers the following aspects:

- Dust and dirt control measures;
- Noise assessment and control measures;
- Routes to be used by vehicles;
- Working hours of the site;
- Details of construction traffic forecasts;
- Times when vehicle movements and deliveries will be made to the site;
- Facilities for loading and unloading; and
- Facilities for parking cars and other vehicles.

Further to the above, a detailed Construction Management Plan (CMP) will be prepared by the main contractor prior to the construction stage. This document, which will be prepared in coordination and agreement with the Local Authority, will outline site logistics and indicate the following:

- Site access location;
- Site boundary lines;
- Tower crane locations;
- Vehicle entry and exit routes to/from the site;
- Location of loading and unloading areas;
- Location of site offices and welfare facilities;
- Location of material storage areas; and
- Banksman locations.

Through the implementation of the detailed CMP prior to the construction stage, it is anticipated that the effect of traffic on the surrounding road network during the construction stage will be minimal.

The analysis of the road network surrounding the subject site has shown that the existing and proposed junctions will operate well below capacity for the future assessment years with the baseline traffic factored up and the inclusion of the proposed development trips. No upgrades to the existing junctions are warranted to accommodate the proposed development.

However, in order to encourage residents and staff of the proposed development to reduce the dependence on private car and avail of sustainable forms of transport such as walking, cycling and public transport, a Travel Plan has been prepared for the subject development and accompanies the subject application under a separate cover.

The Travel Plan sets out a number of specific actions to be implemented with the objective of promoting sustainability, enhancing public transport and reducing the use of private car, such as:

- Advising residents and staff of the development about the upgraded local pedestrian and cycling network facilities such as dedicated pedestrian crossings, wide footpaths and dedicated cycle lanes;
- Regularly informing residents and staff about the bike to work scheme which may be available from their employers;
- Providing information to residents and staff about tax incentives for public transport users;
- Publicising student LEAP travel cars and associated benefits;
- Advising residents and staff regarding local bus routes and their nearest bus stops, the nearest train station, and the travel time to/from Dublin City Centre, Dublin Airport, Wexford City Centre and other key destinations;
- Providing secure cycle parking within the proposed development;
- Providing information regarding car sharing benefits.

The proposed upgrade works on Kilnahue Lane and R725 Carnew Road improve the pedestrian and cyclist network in the surrounding area. The proposed footpaths and cycle lanes will connect to existing facilities along Kilnahue Lane and R725 Carnew Road which are part of the route towards Gorey town centre and public transport facilities.

Monitoring

During the construction phase the following monitoring is advised:

- Construction vehicles routes and parking;
- Internal and external road conditions;
- Construction activities hours of work.

The specific compliance exercises to be undertaken in relation to the range of measures detailed in the final Construction Management Plan will be agreed with the Planning Authority

During the operational phase, the following monitoring is advised in order to further reduce the already minimal traffic effects predicted from the proposed development:

- Carparking capacity and associated occupancy.
- Cycle parking capacity and associated occupancy.

- Public transport serving Gorey town including location of closest bus stops, train station, service frequency and routes, and commuting times from key towns and cities.

The Travel Plan for the proposed development should be monitored by the Management Company for the apartments and updated at regular intervals. This will enable tracking in terms of reduction in the dependence on private car journeys and a shift towards sustainable transport options such as walking, cycling and the use of public transport.

CHAPTER 13 - CULTURAL HERITAGE

The assessment involved a desk-based review of published and unpublished documents, and historical mapping, supported by a field inspection, geophysical survey, and targeted archaeological test excavation. The assessment was carried out according to best practice and guidelines relating to archaeological, architectural and cultural heritage.

There are no recorded archaeological monuments within the proposed development site. A holy well site lies c. 20m outside of the proposed development site, within a private garden (RMP No. WX006-062). The site will not be impacted by the proposed development.

A combination of geophysical survey and archaeological testing, under licence to the Department of Housing, Local Government and Heritage, was carried out at the earliest stages of the development design in order to establish the nature, significance, context and character of the archaeological heritage within the proposed development site. No large sites of archaeological significance were identified, though the testing did identify some isolated sites and features of archaeological potential: an oval pit, a kiln and associated features, a pit, and a series of stakeholes. These features indicate some archaeological activity in this area and as such there is the potential to find further isolated archaeological deposits or features within the proposed development site. Groundworks associated with the proposed development will result in a negative, moderate, permanent impact on the features identified during testing.

The isolated sites and features of archaeological potential identified by testing will be fully excavated in advance of the development. This mitigation measure is appropriate to the nature and scale of the features identified during the testing and is in accordance with best practice. In addition, archaeological monitoring of groundworks associated with the proposed development will be undertaken by a licensed archaeologist. With the implementation of the proposed mitigation measures, it is expected that there will be no remaining impacts on archaeological heritage.

There are no RPS or NIAH sites located within or in the vicinity of the proposed development site.

The ruined vernacular buildings identified within the proposed development site are not designated or listed for protection. An inspection carried out by a conservation architect concluded that they are not of sufficient architectural or historical merit to recommend their retention. A full photographic record of the structures was made and a measured digital survey was undertaken. Given these facts, the demolition of these buildings should be allowed to facilitate the proposed development. No further mitigation measures are required with regard to architectural heritage.

CHAPTER 14 - MATERIAL ASSETS - UTILITIES AND WASTE

This chapter of the Environmental Impact Assessment Report (EIAR) provides an assessment of the impact that the proposed mixed-use development at Kilnahue Lane, Gorey will have on the utilities (Electricity, Telecoms) and waste in the vicinity of the site. It also sets out mitigation and remedial measures and methods of monitoring while the development is operational.

Research for this section included desktop review, review of waste legislation and by-laws, a review of Ordnance Survey and utility records in the vicinity of subject site and surrounding area and a review of the existing utility layouts from ESBN, Eir and Virgin Media. There is no Gas in the vicinity of the site. There are a number of overhead ESBN power lines that serve the adjacent houses and schools. Within the site boundary there are overheads that traverse portions of it that will need diversion underground to accommodate the development. There are adjacent Eir services to Kilnahue Lane and Carnew Road which will need to be connected to in order to service the site. There is a Virgin Media service at the junction of Kilnahue Lane and Carnew Road which will need extension to the site, likely along Kilnahue Lane, to service the development.

There may be power outages in over a short period to connect services to the new development. Similarly, for Eir and Virgin Media. The traffic on Carnew Road and Kilnahue Lane will be impacted by the proposed connections for ESBN, Eir and Virgin Media. Similarly, for Kilnahue Lane. Minor impacts on the schools on Kilnahue Lane is likely during the construction process.

Mitigation measures will be implemented on a site-by-site basis in line with best practice standards. A method statement setting out in detail the procedures to be used when working in the vicinity of existing utilities will be produced by the contractor for any construction works in the public areas. All new utilities will be in accordance with utility providers specification for such works. No significant adverse impacts are expected to arise during the construction stage if the proposed remedial and reductive measures are implemented.

A Construction and Demolition Waste Management Plan (C&DWMP) has been prepared to deal with waste generation during the construction phase of the proposed Project and is included as part of the application packs. This document was prepared in accordance with best practice guidelines. This document must be implemented during the construction works.

Operational waste management must be managed by a designated management company on site and the appointed licenced waste contractor which will ensure the sustainable management of domestic and commercial waste arising from the development in accordance with legislative requirements and best practice standards. A site-specific Operational Waste Management Plan has been prepared by Enviroguide Consulting for the proposed Project and is included as part of the application packs.

Monitoring will be implemented on a site-by-site basis in line with best practice standards. Monitoring of these utilities involves remote sensing elements to detect damage or interruption of service, however local checking is likely and any damage to plant will normally be repaired by either the utility owner or by the party that caused it. Any existing roads and footpaths that are opened to facilitate the utilities will be reinstated. There were no difficulties encountered when undertaking this assessment.

INTERACTION OF IMPACTS

The interaction of impacts, as considered in the EIAR, and their relationship to the information requirements outlined in the European Communities (Environmental Impacts Assessment) Regulations, are summarised as the following:

No.	Heading	Population and Human Health	Biodiversity	Land, Soils & Geology	Water	Air Quality	Noise & Vibration	Climate	Landscape & Visual Impact	Transportation	Cultural Heritage	Material Assets – Utilities & Waste
4	Population and Human Health		✓				✓	✓	✓	✓	✓	✓
5	Biodiversity	✓			✓	✓	✓	✓	✓	✓		
6	Land and Soils	✓	✓		✓			✓	✓			✓
7	Water		✓	✓					✓			✓
8	Air Quality	✓		✓						✓		
9	Noise & Vibration	✓	✓							✓		
10	Climate	✓										
11	Landscape	✓	✓	✓		✓		✓				
12	Material Assets – Traffic and Transport	✓				✓	✓	✓				✓
13	Cultural Heritage								✓			
14	Material Assets – Utilities & Waste	✓			✓					✓		

OVERALL IMPACT ON THE ENVIRONMENT

The Environmental Impact Assessment Report has assessed the characteristics of the proposal for significant environmental impacts. Each topic was examined and the resultant environmental impact, if any, noted and mitigation or reductive measures have been put in place. Accordingly, This EIAR has found that subject to the full implementation of the various mitigation measures specified by the EIAR team and summarised in Chapter 16, the development will have no significant negative impact on the environment.

1.0 INTRODUCTION

1.1 Purpose of This Report

This Environmental Impact Assessment Report (EIAR) has been prepared in parallel with the preparation and formulation of a proposed Strategic Housing Development on lands at Kilnahue & Gorey Hill, Carnew Road & Kilnahue Lane, Gorey, Co. Wexford.

The subject lands extend to approximately 19.17 hectares in area (incl. the proposed off-site upgrade works to existing engineering infrastructure on adjoining roads) and are located to the south-west of Gorey Town Centre between the Kilnahue Road and Carnew Road (R725). The site is bounded by Kilnahue Lane to the northeast, the eastern boundary abuts a number of greenfield lands that abut one-off residential dwellings which front both Carnew Road (R725) and Kilnahue Lane (L10112). A section of the application site fronts the Carnew Road to the south-west of the application site. Agricultural farmland bounds the subject site along its western perimeter boundary.

The proposed development subject to this SHD application provides for the construction of 421 no. residential units comprising of 133 no. houses, 228 no. apartments, and 60 no. duplexes. The proposed development also provides for 1 no. childcare facility, 2 no. community rooms and 2 no. small retail units, a large parkland and numerous pocket parks across the subject lands, car and bicycle parking, and all associated ancillary site development infrastructure works necessary to facilitate the development.

1.2 Nature and Extent of Proposed Development

Gerard Gannon Properties is applying to An Bord Pleanála for planning permission, which as per the description contained within the statutory planning notices, provides for:

“Gerard Gannon Properties intend to apply to An Bord Pleanála for permission for a strategic housing development on lands at Kilnahue & Gorey Hill, Carnew Road (R725) & Kilnahue Lane (L10112), Gorey, Co. Wexford.

The development will consist of the demolition of all existing, derelict structures on site and the construction of a mixed-use development comprising of 421 no. residential units (133 no. houses, 228 no. apartments, and 60 no. duplexes); with 1 no. childcare facility, 2 no. retail units and 2 no. community rooms, all of which will be provided as follows:

- *133 no. two-storey houses (a total of 115 no. 3 beds consisting of 106 no. 3-bed, terraced houses; 8 no. 3 bed, semi-detached houses; and 1 no. 3 bed, detached house; and a total of 18 no. 4 bed, terraced houses), all with associated car parking;*
- *52 no. hybrid duplex units (26 no. 2 bed units and 26 no. 3 bed units) in 13 no. three storey buildings, and all units provided with private balconies/terraces, with car parking, bike storage and bin stores;*
- *Apartment Block A containing a total of 24 no. units comprising of 10 no. 1 bed units, 14 no. 2 bed units, in a building three storeys in height over lower-level access cores, and all apartments provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*

- *Apartment Block B containing a total of 24 no. units comprising of 10 no. 1 bed units, 14 no. 2 bed units, in a building three storeys in height over lower-level access cores, and all apartments provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*
- *Apartment Block C containing a total of 24 no. units comprising of 10 no. 1 bed units, 14 no. 2 bed units, in a building three storeys in height over lower-level access cores, and all apartments provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*
- *Apartment Block D containing a total of 24 no. units comprising of 10 no. 1 bed units, 14 no. 2 bed units, in a building three storeys in height over lower-level access cores, and all apartments provided with private balconies/terraces, with car parking spaces and bicycle spaces, and bin stores;*
- *Apartment Block E containing a total of 28 no. units comprising of 8 no. 1 bed units, 19 no. 2 bed units, and 1 no. 3 bed unit, in a building four storeys in height over undercroft parking, and all apartments provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*
- *Apartment Block F containing a total of 28 no. units comprising of 8 no. 1 bed units, 19 no. 2 bed units, and 1 no. 3 bed unit, in a building four storeys in height over undercroft parking, and all apartments provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*
- *Apartment Block G containing a total of 28 no. units comprising of 8 no. 1 bed units, 19 no. 2 bed units, and 1 no. 3 bed unit, in a building four storeys in height over undercroft parking, and all apartments provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*
- *Apartment Block H containing a total of 28 no. units comprising of 8 no. 1 bed units, 19 no. 2 bed units, and 1 no. 3 bed unit, in a building four storeys in height over undercroft parking, and all apartments provided with private balconies/terraces, with car parking spaces and bicycle spaces, and bin stores;*
- *Duplex Block J containing a total of 8 no. units comprising of 4 no. 1 bed units and 4 no. 3 bed units, in a building three storeys in height, and all units provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*
- *Block EAB containing a total of 10 no. apartments comprising of 7 no. 2 bed units and 3 no. 3 bed units, in a building three storeys in height, and all apartments provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*
- *Block XAB is a mixed-use block containing a total of 10 no. apartments comprising of 4 no. 1 bed units, and 6 no. 2 bed units, and all apartments provided with private balconies/terraces; with 2 no. community rooms and 2 no. small retail units at ground floor level, all in a building three storeys in height, with car parking and bicycle spaces, and bin stores; and,*
- *1 no. childcare facility in a two-storey split level building with associated outdoor play areas; car parking and set down area; bicycle spaces; pram/buggy storage; and bin stores.*

The development provides for a total of 759 no. car parking spaces and 480 no. bicycle spaces. The development also provides for two vehicular accesses and one pedestrian/cyclist crossing and associated road upgrade works, all on Kilnahue Lane (L10112); one vehicular access on Carnew Road (R725) and associated road upgrade works; proposed upgrades to public realm including footpaths and cycle lanes, with proposed upgrade of the Carnew Road/Kilnahue Lane junction to a signalised junction; landscaping including a neighbourhood park, a playground and MUGA with associated

neighbourhood parking; pocket parks; boundary treatments; public lighting; and all associated engineering and site works necessary to facilitate the development including proposed new sewer and associated upgrade works to existing engineering infrastructure on Carnew Road, Kilnahue Lane, Main Street and Esmonde Street.

The application contains a statement setting out how the proposal will be consistent with the objectives of the Wexford County Development Plan 2013-2019 and Gorey Town and Environs Local Area Plan 2017-2023.

The application contains a statement indicating why permission should be granted for the proposed development, having regard to a consideration specified in section 37(2)(b) of the Planning and Development Act, 2000, as amended, notwithstanding that the proposed development materially contravenes a relevant development plan or local area plan other than in relation to the zoning of the land.

An Environmental Impact Assessment Report (EIAR) has been prepared in respect of the proposed development.”



Figure 1-1. Outline of Lands Site Boundary and Aerial View (source: Google Maps) (off-site works not included)

1.3 EIA Process

The EIA requirements are governed by Directive 2014/52/EU, which amends the previous EIA Directive (Directive 2011/92/EU). Ensuring that projects that are likely to have significant effects on the

environment are subjected to an assessment of their likely impacts is the primary purpose of EIA. The EIA process itself helps to form part of the planning consent process and is carried out by the Competent Authority (An Bord Pleanála in this instance).

An EIAR is prepared by and on behalf of an applicant/developer in respect of a project proposal that is seeking planning consent/permission. Therefore, the EIAR becomes a central element that informs the Competent Authority's EIA.

The 2014 Directive introduced strict requirements in respect of the competency of experts responsible for the preparation of the EIAR. It is possible to summarise the EIA process as follows:

1. Screening - Is EIA required?
2. Scoping - If EIA is required, what aspects of the Environment should be considered?
3. Preparation of EIAR.
4. EIAR informs EIA (as part of the consent process).

1.4 The Need for an Environmental Impact Assessment Report

The EIA Directive was transposed into Irish Planning legislation on 1st September 2018. Section 172(1) of the Planning and Development Act 2000 (as amended) sets out the requirement for EIA. This current proposed project has been screened for EIA in accordance with the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018).

The EIA Directives list those projects for which an EIA is mandatory (Annex I) and those projects for which an EIA may be required (Annex II). Annex I projects are listed in Part 1 of Schedule 5 of the Planning and Development Regulations 2001 (as amended) ("the Regulations"). The Project is not listed within Part 1 of Schedule 5 of the Regulations and therefore mandatory EIA is not required under Annex 1. With respect to Part 2 of Schedule 5 (Annex II) Projects, the relevant thresholds relating to the subject proposal are outlined below:

Class 10(b)(i) "Construction of more than 500 dwelling units."

This project comprises a residential development including the provision of 421 no. new residential dwelling units. Therefore, the Project falls below the stated threshold, and an EIA is not required in this context.

Class 10(b)(ii): "Construction of a car-park providing more than 400 spaces, other than a car-park provided as part of, and incidental to the primary purpose of a development."

The Project does not include a car park providing 400 no. spaces or more. Furthermore, all car parking being provided within the project is incidental to the primary purpose of the residential development. Therefore, the car parking element of the project does not fall within this Class of Regulations.

Class 14: "Works of Demolition - Works of demolition carried out in order to facilitate a project listed in Part 1 or Part 2 of this Schedule where such works would be likely to have significant effects on the environment, having regard to the criteria set out in Schedule 7."

The Project whilst it does require the demolition of existing derelict structures on site, the demolition works in this instance are considered minor in nature and therefore, the demolition element of the project does not fall within this Class of Regulations.

Class 10(b)(iv): “Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere”.

In this instance, the application site extends to c. 19.17 hectares in area (incl. the off-site upgrade works to existing infrastructure on adjoining roads) within what can be considered a built-up area. Thus, an EIA is required, and accordingly an Environmental Impact Assessment Report has been prepared to accompany this planning application.

This EIAR has been prepared in accordance with the requirements of the following statutory documents:

- *The European Community Directive on Environmental Impact Assessment (No 85/337/EEC);*
- *The European Community Directive (97/11/EC) amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment;*
- *The Planning and Development Act, 2000 (as amended) and the Planning and Development Regulations 2000-2015;*
- *European Commission, Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (May 1999);*
- *European Commission, Guidance on EIA Screening (June 2001);*
- *European Commission, Guidance on EIA Scoping (June 2001);*
- *Environmental Protection Agency (EPA), Guidelines on the information to be contained in Environmental Impact Statements (March 2002);*
- *EPA, Advice Notes on Current Practice (in the preparation of Environmental Impact Statements) (September 2003);*
- *EPA, Guidelines on the Information to be contained in Environmental Impact Assessment Reports (August 2017);*
- *EPA, Advice notes for preparing Environmental Impact Statements Draft (September 2015);*
- *European Commission, Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (April 2013)*
- *Circular Letter PI 1/2017: Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive)*
- *The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018); and,*
- *The Guidelines for Planning Authorities and An Bord Pleanála on Carrying Out Environmental Impact Assessment.*

The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018) transposed the requirements of the 2014 EIA Directive into Irish Planning Law. On 1st September 2018, the provisions of the Regulations came into effect. This EIAR has been prepared in light of these EIAR Regulations and has also had regard to the ‘*Guidelines for Planning*

Authorities and An Bord Pleanála on Carrying Out Environmental Impact Assessment' which were published in August 2018.

1.5 Scope of Environmental Impact Assessment Report

The scope of this EIAR has had regard to the following:

- *Guidelines on the recommended information to be contained in EIAR, which have been published by the EPA;*
- *The requirements of Part X of the Planning and Development Act, 2000 (as amended) and also Part 10 of the Planning and Development Regulations, 2001-2015;*
- *The requirements of the Wexford County Development Plan 2013-2019;*
- *The requirements of the Gorey Town and Environs Local Area Plan 2017-2023;*
- *The location, scale and nature of the proposed development;*
- *The receiving environment and any vulnerable or sensitive local features and current uses;*
- *Previous planning applications that have been submitted on adjoining lands;*
- *The likely and significant impacts of the proposed development on the environment; and,*
- *Available mitigation measures for reducing or eliminating any potential undesirable impacts.*

Other assessments made pursuant to EU legislation have been considered for this EIAR, however these have been ruled out as irrelevant for this chapter, for example the Environmental Noise Directive (2002/49/EC) and the Strategic Environmental Assessment Directive (2001/42/EC).

1.6 Structure of Environmental Impact Assessment Report

An EIAR is a process of examining and assessing the environment in tandem with a proposed development in a series of loops and flow systems to ensure that all potential environmental impacts are documented and taken into the consideration of the overall formulation of the proposed development inter alia through the design process.

This process allows for the creation of a series of steps in the assessment of potential impacts on various elements of the environment.

The overall structuring of this EIAR has regard to the information requirements of the Directives and Irish Statutory Regulations. In accordance with the statutory regulations, a Non-Technical Summary has been prepared and is included as part of this EIAR. The structure used in this report is a grouped format structure in the form of chapters which examine the broadened scope of environmental considered introduced by the 2014 Directive.

The structure of this EIAR is based on the requirement to provide a detailed and systematic analysis of the environment at the subject lands at; potential impacts of the development; proposed mitigation measures and future monitoring of environmental indicators.

1.7 The EIAR Study Team

This EIAR has been prepared by a team of consultants led by Downey, Chartered Town Planners and Project Managers. The table below provides information on the members of the EIAR study team and their respective inputs within the report.

Table 1-1. The EIAR Study Team

Name	Role
<p><u>Downey</u></p> <p>(John Downey, Planning Consultant, BA (Hons), MRUP, MBA, MIPI, MRTPI & Eva Bridgeman, Planning Consultant & Project Manager, BA (Hons), MRUP, MIPI)</p>	<p>EIAR Project Managers, & Planning Consultants</p> <p>Preparation of following EIAR chapters:</p> <ul style="list-style-type: none"> ▪ <i>Introduction</i> ▪ <i>Description of Development & Alternatives Considered</i> ▪ <i>Planning and Development Context</i> ▪ <i>Population & Human Health</i> ▪ <i>Material Assets (with input from other consultants as part of the EIA team)</i> ▪ <i>Interactions</i> ▪ <i>Mitigation Measures</i> ▪ <i>Compilation of EIAR</i>
<p><u>Connolly Architects</u></p> <p>(Michael Connolly FRIAI)</p>	<p>Project Architects</p> <p>Preparation of following EIAR chapters:</p> <ul style="list-style-type: none"> ▪ <i>Description of Development & Alternatives Considered</i> ▪ <i>Mitigation Measures</i>
<p><u>Waterman Moylan Consulting Engineers</u></p> <p>(Mark Duignan, Associate Director, Engineer, MA BAI CEng MIEI)</p>	<p>Consulting Engineers</p> <p>Preparation of following EIAR chapters:</p> <ul style="list-style-type: none"> ▪ <i>Transportation & Traffic</i> ▪ <i>Water</i> ▪ <i>Land and Soils</i> ▪ <i>Utilities</i> ▪ <i>Waste</i> ▪ <i>Mitigation Measures</i>
<p><u>Ronan MacDiarmada & Associates Ltd.</u></p> <p>(Ronan MacDiarmada MILI)</p>	<p>Landscape Architects</p> <p>Preparation of following EIAR chapters:</p> <ul style="list-style-type: none"> ▪ <i>Landscape and Visual Impact Assessment</i> ▪ <i>Mitigation Measures</i>
<p><u>Courtney Deery Heritage Consultancy Ltd.</u></p> <p>(Dr. Clare Crowley Cultural Heritage Consultant)</p>	<p>Cultural Heritage Specialists</p> <p>Preparation of following EIAR chapters:</p> <ul style="list-style-type: none"> ▪ <i>Cultural, Archaeology, & Architectural Heritage</i> ▪ <i>Material Assets</i> ▪ <i>Mitigation Measures</i>
<p><u>Openfield Ecological Services</u></p> <p>(Padraic Fogarty, Ecologist, MSc in EclA)</p>	<p>Ecologists</p> <p>Preparation of following EIAR chapters:</p> <ul style="list-style-type: none"> ▪ <i>Biodiversity, Flora, and Fauna</i> ▪ <i>Mitigation Measures</i>
<p><u>DKP International Ltd</u></p> <p>Gerard Van Deventer C.ENG., BE. (Mech)., H. Dip. CIOB., MCIBSE.</p>	<p>Scientists/Specialist Consultants</p> <p>Preparation of following EIAR chapters:</p> <ul style="list-style-type: none"> ▪ <i>Air Quality</i> ▪ <i>Noise & Vibration</i> ▪ <i>Climate</i> ▪ <i>Mitigation Measures</i>

The development is being proposed by Gerard Gannon Properties, Kinvara House, 52 Northumberland Road, Ballsbridge, Dublin 4.

1.8 Impartiality

This EIAR has been prepared in reference to a standardised methodology that is accepted and acknowledged universally. Competently qualified and experienced specialists have been used throughout the EIA process in order to ensure that this document is robust, subjective and impartial.

1.9 Statement of Difficulties Encountered

No exceptional difficulties were experienced in compiling this EIAR. However, where difficulties may have been encountered by the study team, this shall be stated within the relevant section of the EIAR.

1.10 Errors

Every effort has been made to ensure that the EIAR is error free and accurate. However, there may be instances within the document where typographical errors or minor errors may occur. Any such cases are unlikely to have any material impact on the overall and final findings contained in the EIAR.

1.11 References

A reference list detailing the sources used for the descriptions and assessment has been included with each chapter, where necessary.

2.0 DESCRIPTION OF PROJECT & ALTERNATIVES CONSIDERED

2.1 Site Location and Context

The subject site is located to the south-west of Gorey Town Centre between the Kilnahue Lane and Carnew Road (R725). The site lies within open undulating fields and is bounded to the south by the regional road R725 and some residential development, to the east by pasture fields behind residential and commercial development, to the north and northeast by a local road L10112 Kilnahue Lane, and to the west by open crop fields and beyond that some modern farmsteads and dwellings.

The surrounding area is characterised by detached dwellings on single plots, as well as smaller-scale residential developments in a variety of designs and layouts, particularly along Carnew Road, the R725. The site gently from west to east, towards the town and from north to south. The site's boundaries comprise of native hedgerows with a number of trees interspersed throughout.

Residential development in the immediate vicinity generally consists of detached dwellings. Kilnahue Lane is a local access road serving a number of detached houses, two primary schools and a motor service unit.

Carnew Road is a recently upgraded regional road. From the junction with Kilnahue Lane it has a footpath, cycle path and layby parking for the first 80m of its northern edge. Beyond this a footpath continues on its southern edge. A 50 kph speed limit applies in this general area.

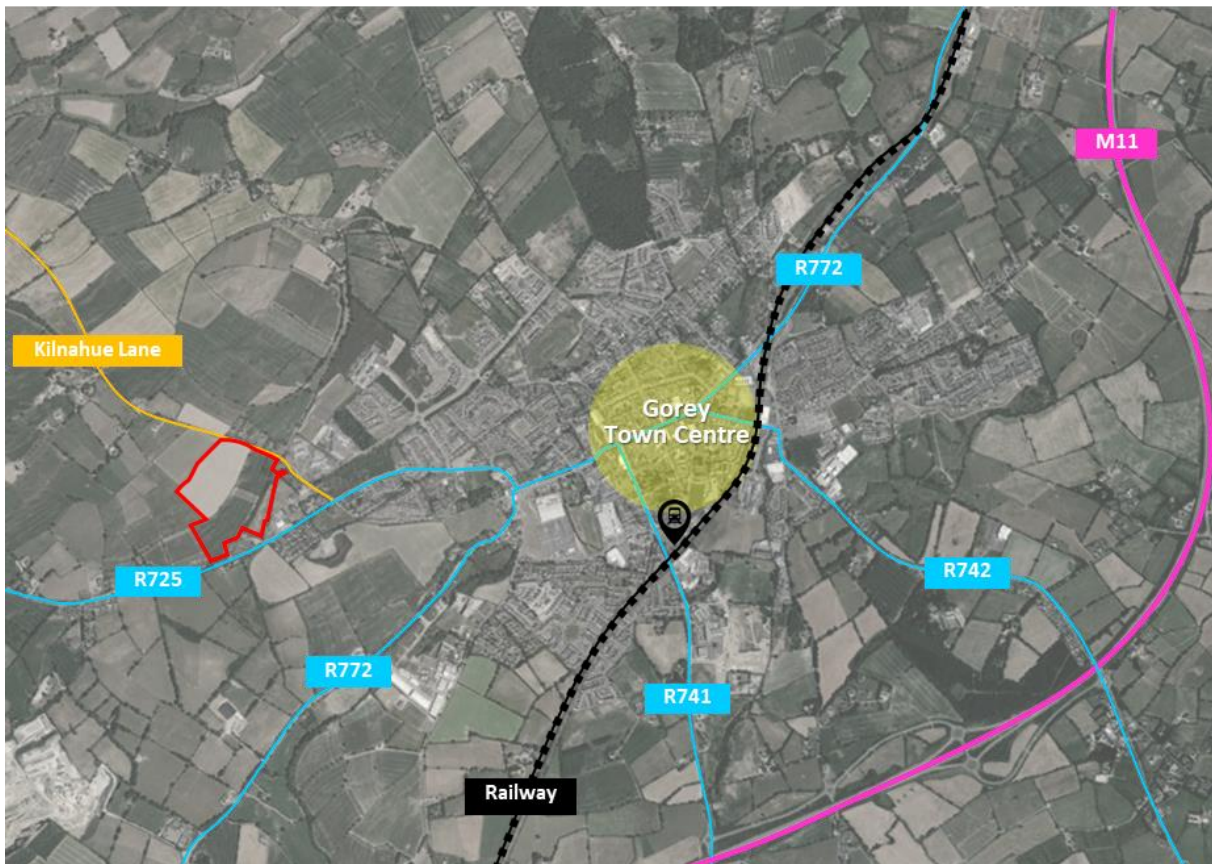


Figure 2-1. Aerial View of the Location of the Subject Site (approximate boundaries of the SHD subject site outlined in red)

2.2 Site Description

The application site is a greenfield site spreading across irregular shaped fields, and is located to the south-west of Gorey Town Centre between Kilnahue Road and Carnew Road (R725).

The application site extends to an approximate total area of 19.17 hectares (incl. the off-site proposed engineering infrastructure upgrade works). There is a land plot to north-eastern corner of the application site defined by tree lined rubble stone walls. This farm-yard complex comprises of derelict structures which are to be demolished to facilitate the development.

Given the location of the subject lands situated on a hill, the terrain on site is slightly undulating, bound by mature hedgerow and slopes from the southeast to its summit in the northwest.

The northern boundary of the lands along Kilnahue Lane is characterised by quite dense mature woodland. An agricultural entrance to the lands is located to the northern corner of the site along Kilnahue Lane, and the other agricultural entrance is located further south within close proximity to the existing residential dwellings and national school.

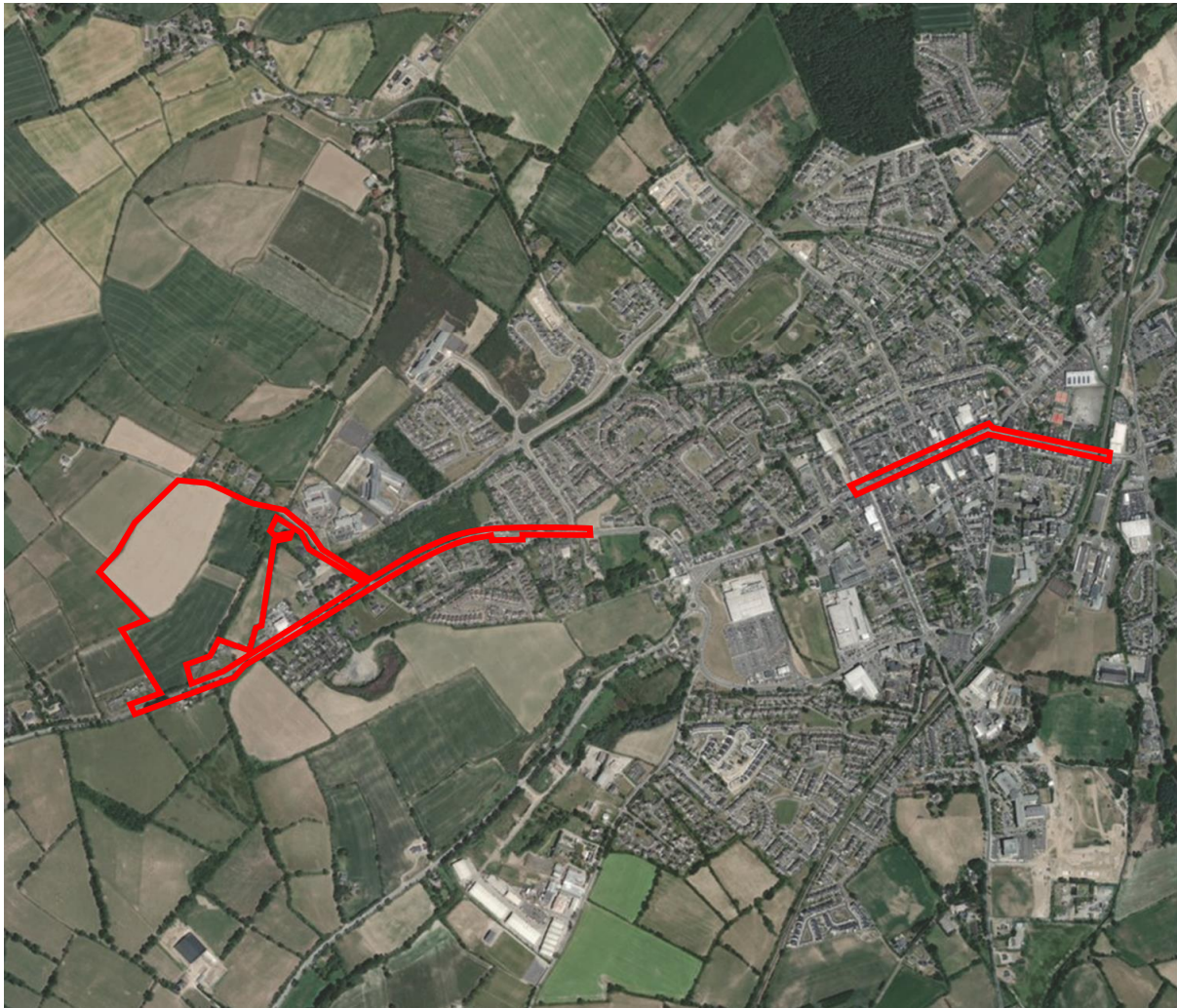


Figure 2-2. Aerial View of the Application Site (incl. off-site upgrade works)

2.3 Design Principles

It was determined that the design parameters should incorporate the following objectives:

- Closer adherence to the 12 Criteria set down in Sustainable Residential Development in Urban Areas 2009
- Residential Density of at least 35 units per hectare
- Comply with the Gorey Town and Environs Local Area Plan and Creagh Neighbourhood Framework by incorporating clearer urban typologies
- Enhance the distinctiveness of the development in terms of layout, treatment of entrances and amenity.

The principal restrictions and limitations to achieving these objectives in the design were:

- Site topography
- Appropriate scale
- Traffic management and safety
- Car Parking Standards

In response to the design parameters and restrictions, the layout has been developed to in accordance with a number of general principles. These principles relate to circulation, permeability, and also include variety, distinctiveness, identity and community.

2.4 Description of Proposed Development

The proposed development subject to this Strategic Housing Development application provides for demolition of a dilapidated structure on the lands and construction of 421 no. residential dwellings, comprising of 133 no. houses, 228 no. apartments, and 60 no. duplexes. The proposed development also provides for 1 no. childcare facility, a multi-purpose building comprising of 2 no. community rooms and 2 no. small retail units, and a large parkland and numerous pocket parks across the subject lands, car and cycle parking spaces, and all associated ancillary site development infrastructure works necessary to facilitate the development.

The form and buildings envelope of the proposed residential scheme will be two to four storeys which has been designed for an appropriate variation from the surrounding residential areas, to create for a legible development with various character areas, with respect to the unique site setting properties and topography. This is anchored around an 'Entrance Building' located strategically off the Carnew Road, evoking a strong image of the scheme by its height, mass, and physical characteristics. Thus, sense of place announces the entrance to the emerging community.

Design and materials will be of a high quality and there will be a mixture of unit configurations across the site to avoid a homogenous block appearance and to facilitate the various type of family units that will ultimately occupy the units. It is proposed to provide a mix of one, two, and three bed apartments and duplexes, and three and four bed houses providing for a mix of units.

2.5 Characteristics of Proposed Development

The following provides a detailed overview of characteristics of the proposed Strategic Housing Development.

2.5.1 Site Location

The proposed development is located on lands at Kilnahue and Gorey Hill, Carnew Road & Kilnahue Lane, Gorey, County Wexford. The lands are generally bounded by Kilnahue Lane to the northeast, the eastern boundary abuts a number of greenfield lands that abut one-off residential dwellings which front Carnew Road (R725) and Kilnahue Lane. A section of the application site fronts the Carnew Road to the south-west of the application site. Agricultural farmland bounds the subject site along its western perimeter boundary.

2.5.2 Site Area

The site subject to this SHD application extends to an area of approximately 19.17 hectares which also includes the proposed engineering infrastructure upgrade works on Carnew Road, Kilnahue Lane, Main Street and Esmonde Street, however, the quantum of lands in the ownership of applicant is circa 15.3 hectares. The development site includes existing mature trees and hedgerows along its boundaries, which are to be maintained and/or incorporated within the scheme.

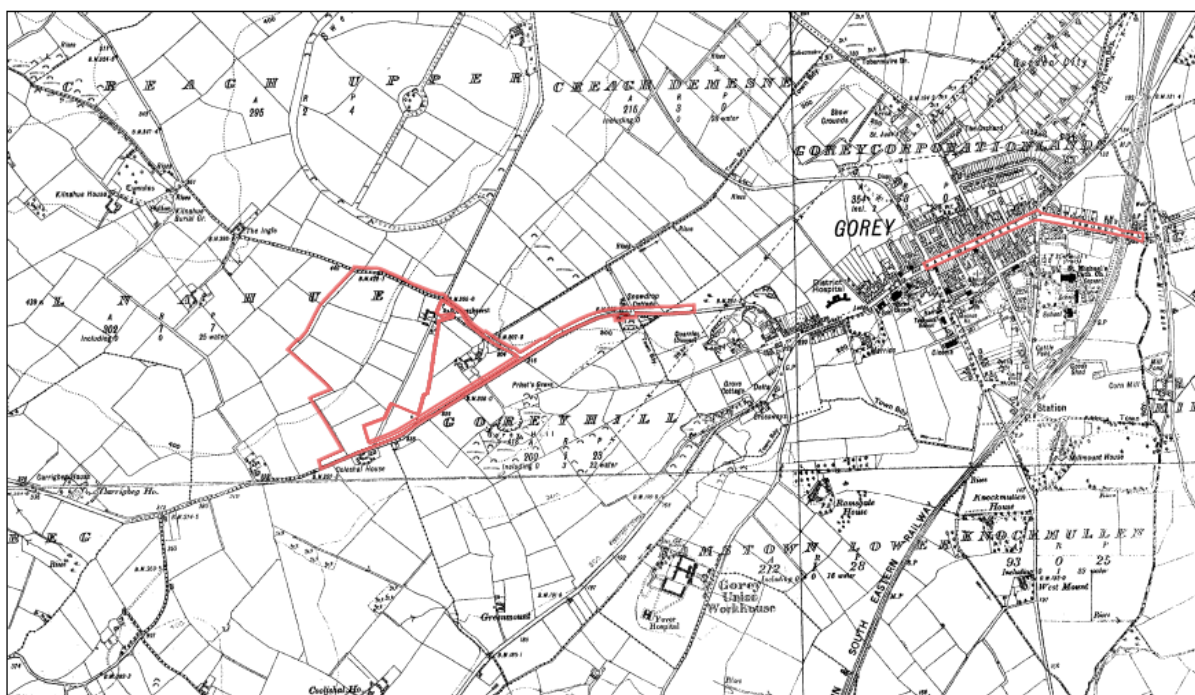


Figure 2-4. Site Boundaries (source: Connolly Architects)

2.5.3 Density of Development

As outlined earlier, the site subject to this SHD application extends to approximately 19.17 hectares (including the off-site upgrade works), however, it is characterised with a unique setting which appears as both an opportunity to deliver a distinct development fused within topographical feature of the site, and a constraint which restricts the quantum of developable land to provide for housing and directly associated uses.

It is also acknowledged that the view expressed in An Bord Pleanála Reference PL 26.448159 is that net densities below 30 units per hectare should be discouraged. The ABP Pre-Application Consultation Opinion on this SHD also emphasised the necessity to provide for *'an acceptable efficiency in serviceable land usage'*.

Having taken account of the slope and topography of the site and its location on the edge of Gorey Town together with the ABP Opinion, and the Circular NRUP 02/2021 (Residential Densities in Towns and Villages), aforementioned Guidelines, and other relevant planning policy, and upon designing several scenarios yielding various residential densities, the Stage 3 design proposes a higher density. It is proposed that the application site will achieve a net density c. 38 units per hectare. This has been calculated as per the provided guidance on the Appendix A of the Guidelines, as follows:

- Overall Site Area Subject to this SHD Application: 19.17 ha
- Net Site Area: 11.15 ha
- Net Density: 421 units ÷ 11.15 ha = 37.7 uph

This is considered to provide for an efficient use of a Tier 1 Serviced Lands, facilitating sustainable development of the lands, and therefore, accords with the requirements of the relevant planning policy and guidelines. Therefore, it is submitted that this previous refusal reason has been addressed. For further information in this regard, please refer to the enclosed Architecture Pack prepared by Connolly Architects.

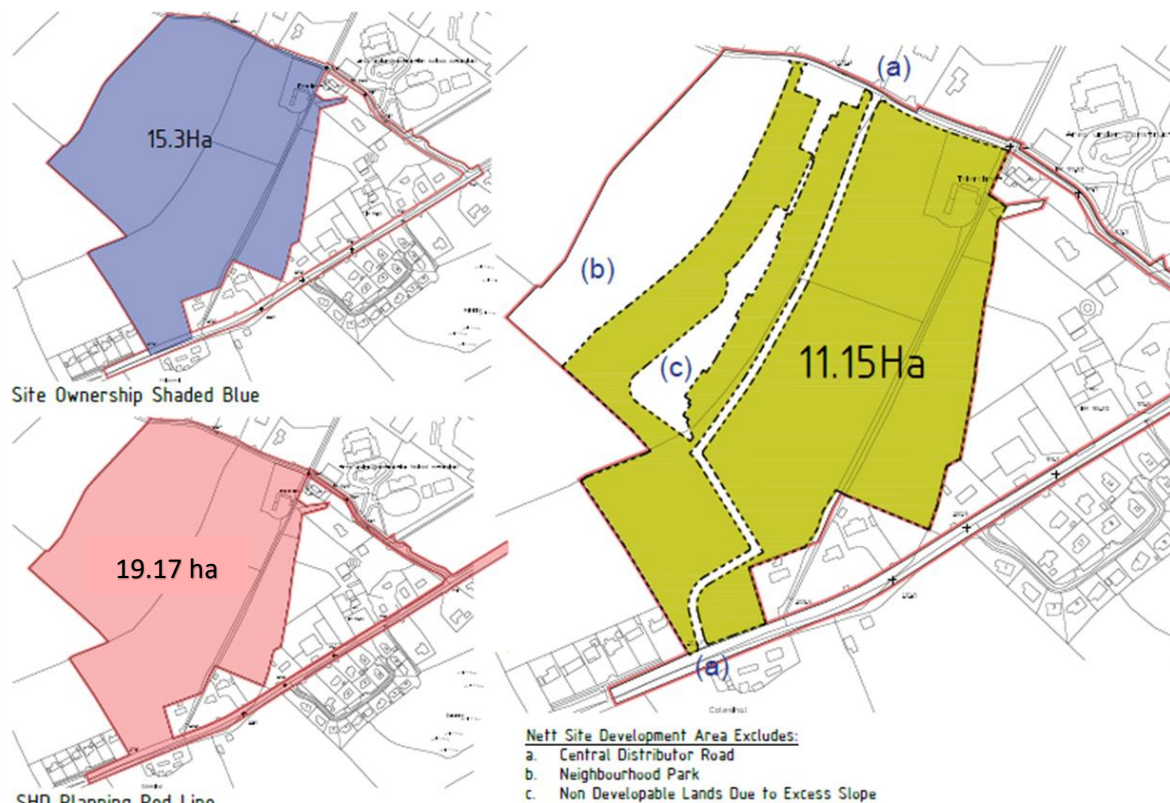


Figure 2-5. Indication of Net Density Calculation for the Proposed Scheme (source: Connolly Architects)

Thus, the residential density of the proposed development is in keeping with the decision of an Bord Pleanála and is consistent with the Circular NRUP 02/2021 (Residential Densities in Towns and Villages), the DEHLG Guidelines on *"Sustainable Residential Development in Urban Areas and Best*

Practice Urban Design Guidelines (2009)” and accompanying Design Manual. In light of the objectives and constraints associated with the development site, it is considered that the density proposed represents an optimum design solution and an efficient use of the site.

2.5.4 Detailed Description of Proposed Development

The proposed Strategic Housing Development is defined as follows within the statutory planning notices:

“Gerard Gannon Properties intend to apply to An Bord Pleanála for permission for a strategic housing development on lands at Kilnahue & Gorey Hill, Carnew Road (R725) & Kilnahue Lane (L10112), Gorey, Co. Wexford.

The development will consist of the demolition of all existing, derelict structures on site and the construction of a mixed-use development comprising of 421 no. residential units (133 no. houses, 228 no. apartments, and 60 no. duplexes); with 1 no. childcare facility, 2 no. retail units and 2 no. community rooms, all of which will be provided as follows:

- *133 no. two-storey houses (a total of 115 no. 3 beds consisting of 106 no. 3-bed, terraced houses; 8 no. 3 bed, semi-detached houses; and 1 no. 3 bed, detached house; and a total of 18 no. 4 bed, terraced houses), all with associated car parking;*
- *52 no. hybrid duplex units (26 no. 2 bed units and 26 no. 3 bed units) in 13 no. three storey buildings, and all units provided with private balconies/terraces, with car parking, bike storage and bin stores;*
- *Apartment Block A containing a total of 24 no. units comprising of 10 no. 1 bed units, 14 no. 2 bed units, in a building three storeys in height over lower-level access cores, and all apartments provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*
- *Apartment Block B containing a total of 24 no. units comprising of 10 no. 1 bed units, 14 no. 2 bed units, in a building three storeys in height over lower-level access cores, and all apartments provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*
- *Apartment Block C containing a total of 24 no. units comprising of 10 no. 1 bed units, 14 no. 2 bed units, in a building three storeys in height over lower-level access cores, and all apartments provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*
- *Apartment Block D containing a total of 24 no. units comprising of 10 no. 1 bed units, 14 no. 2 bed units, in a building three storeys in height over lower-level access cores, and all apartments provided with private balconies/terraces, with car parking spaces and bicycle spaces, and bin stores;*
- *Apartment Block E containing a total of 28 no. units comprising of 8 no. 1 bed units, 19 no. 2 bed units, and 1 no. 3 bed unit, in a building four storeys in height over undercroft parking, and all apartments provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*
- *Apartment Block F containing a total of 28 no. units comprising of 8 no. 1 bed units, 19 no. 2 bed units, and 1 no. 3 bed unit, in a building four storeys in height over undercroft parking, and all apartments provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*

- *Apartment Block G containing a total of 28 no. units comprising of 8 no. 1 bed units, 19 no. 2 bed units, and 1 no. 3 bed unit, in a building four storeys in height over undercroft parking, and all apartments provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*
- *Apartment Block H containing a total of 28 no. units comprising of 8 no. 1 bed units, 19 no. 2 bed units, and 1 no. 3 bed unit, in a building four storeys in height over undercroft parking, and all apartments provided with private balconies/terraces, with car parking spaces and bicycle spaces, and bin stores;*
- *Duplex Block J containing a total of 8 no. units comprising of 4 no. 1 bed units and 4 no. 3 bed units, in a building three storeys in height, and all units provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*
- *Block EAB containing a total of 10 no. apartments comprising of 7 no. 2 bed units and 3 no. 3 bed units, in a building three storeys in height, and all apartments provided with private balconies/terraces, with car parking and bicycle spaces, and bin stores;*
- *Block XAB is a mixed-use block containing a total of 10 no. apartments comprising of 4 no. 1 bed units, and 6 no. 2 bed units, and all apartments provided with private balconies/terraces; with 2 no. community rooms and 2 no. small retail units at ground floor level, all in a building three storeys in height, with car parking and bicycle spaces, and bin stores; and,*
- *1 no. childcare facility in a two-storey split level building with associated outdoor play areas; car parking and set down area; bicycle spaces; pram/buggy storage; and bin stores.*

The development provides for a total of 759 no. car parking spaces and 480 no. bicycle spaces. The development also provides for two vehicular accesses and one pedestrian/cyclist crossing and associated road upgrade works, all on Kilnahue Lane (L10112); one vehicular access on Carnew Road (R725) and associated road upgrade works; proposed upgrades to public realm including footpaths and cycle lanes, with proposed upgrade of the Carnew Road/Kilnahue Lane junction to a signalised junction; landscaping including a neighbourhood park, a playground and MUGA with associated neighbourhood parking; pocket parks; boundary treatments; public lighting; and all associated engineering and site works necessary to facilitate the development including proposed new sewer and associated upgrade works to existing engineering infrastructure on Carnew Road, Kilnahue Lane, Main Street and Esmonde Street.

The application contains a statement setting out how the proposal will be consistent with the objectives of the Wexford County Development Plan 2013-2019 and Gorey Town and Environs Local Area Plan 2017-2023.

The application contains a statement indicating why permission should be granted for the proposed development, having regard to a consideration specified in section 37(2)(b) of the Planning and Development Act, 2000, as amended, notwithstanding that the proposed development materially contravenes a relevant development plan or local area plan other than in relation to the zoning of the land.

An Environmental Impact Assessment Report (EIAR) has been prepared in respect of the proposed development.”

2.5.5 Demolition Works & Phasing

The proposed development will involve demolition and site clearance works, with the demolition of the derelict structures on site required to facilitate the new residential development. This is outlined in more detail in the Preliminary Construction and Demolition Waste Management Plan, prepared by Waterman-Moylan Consulting Engineers. The construction programme is intended to be a 24-month programme and it will be carried out in four phases as shown in the figure below. Each phase is to be constructed in two stages which will include, in broad terms, the following:

- **Stage I:** Site clearance and preparation work for the construction of the housing units and all associated infrastructure.
- **Stage II:** Site development and construction of residential dwellings and associated uses development. The development includes all associated site works and infrastructure which includes landscaped open space, internal roads, paths, public lighting, utilities, foul and surface water drainage.

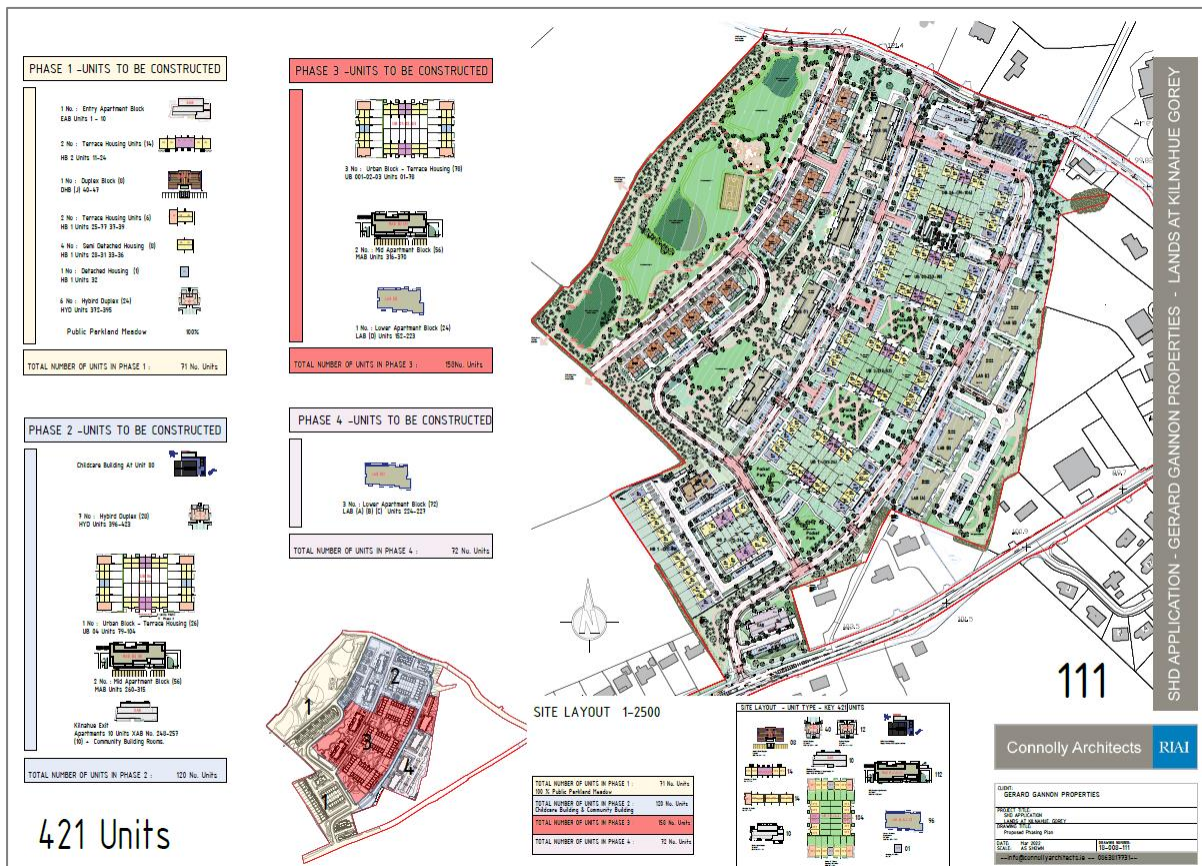


Figure 2-6. Proposed Phasing Plan

2.5.6 General Layout

The layout of the proposed development can be summarised as below:

- Primary vehicular circulation is based on the three Routes, i.e., the Park Avenue, the Middle and the Lower Avenues which follow the contours and topography of the site.

- The Avenues create and define the Urban Design of the development and allow the visual transition between the different site levels. The Avenues further define the Character Areas within the development.
- The Lower Avenue connects the entrance from R725 Carnew Road along the lower levels of the development and track the old rural lane which ceased to exist some time ago.
- A Distinctive Landmark building is located at the entrance to the estate from the Carnew Road. This signals the distinctiveness and identity of the development.
- A link road running northwards up the slope connects to the Middle Avenue and to the Park Avenue beyond. This provides the primary means of vehicular access and connects to all secondary routes within the development. The road design and layout have been carefully designed to ensure that Kilnahue development will not become a through route for non-residents.
- The Park Avenue provides access for the Residents and other users to the Public Park. Housing is laid out in an 'Urban Villa' arrangement overlooking the park thus giving a strong edge to the public open space.
- The development is laid out in residential clusters and urban blocks as envisaged in the Local Area Plan. Apartment Blocks are located at the lower levels of the site.
- The layout of the scheme has been designed to promote permeability and openness through the site and across the new Public Open Space Park.
- The layout and 'Desire Line' routes, through the development promote passive surveillance of the site and allow visual connections to the shared amenities provided throughout the site.
- Travel routes within the development have been designed with reference to the principles established by DMURS and are arranged in a manner that prevents excessively long vehicular routes while maintaining pedestrian links across the site.
- Many well landscaped pocket parks, smaller open spaces and pedestrian links are provided throughout to provide visual amenity. The existing tree borders have been retained where viable and have been fully integrated into the overall landscape strategy.
- The crèche, retail units and community rooms are located abutting Kilnahue Lane to mark the entrance to the development at this location and recognise that many of the users of the childcare facility may in fact come from adjoining residential areas.

2.5.7 Building Height and Form

The height of the proposed development will range from 2 storeys to 4 storeys, with the variation in height being supported by the variation in housing types and the different character areas. This includes four-storey apartment buildings, three-storey duplex buildings in two typologies, and conventional own door housing on own curtilage.

The designers have also utilised the existing characteristics of the site to determine the appropriate buildings heights and form, i.e., in response to the issues arising from the severely sloped character of

the site, the higher buildings have been located where they will have the least visual impact while contributing to the urban character which is being created.

Therefore, the heights being proposed are suggested to be consistent with national planning guidelines, particularly the *“Urban Development and Building Heights Guidelines for Planning Authorities (December 2018)”*.

2.5.8 Unit Mix

The proposed scheme provisions for an overall of 421 no. residential units, offering a variety of unit mix in terms of size and type, as summarised in the table below.

Table 2-1. Proposed Residential Mix Statistics

Dwelling Type	Unit Type	Bedroom Provision	No. of Units
Apartments	1 Bed Apartments	1 Bed	76
	2 Bed Apartment (3 Person)	2 Bed	20
	2 Bed Apartment (4 Person)	2 Bed	125
	3 Bed Apartments	3 Bed	7
Duplex Apartments	1 Bed Block Duplex Lower	1 Bed	4
	3 Bed Block Duplex Upper	3 Bed	4
Terraced Houses	4 Bed End of Terrace	4 Bed	18
	3 Bed Mid Terraced	3 Bed	84
Semi-Detached Houses	3 Bed End Terrace	3 Bed	22
	3 Bed Semi Detached	3 Bed	8
Detached Houses	3 Bed Detached	3 Bed	1
Duplex Houses	Upper Unit Hybrid Duplex	3 Bed	26
	Lower Unit Hybrid Duplex (3 Person)	2 Bed	26
Total		421	

This will provide significant diversity of dwelling types to meet the policies of the Gorey LAP in relation to Housing Mix. The proposal also allows for a wide choice of dwelling types meeting the needs of people of all age groups and stages of personal and family life.

The mix of unit types is provided in the development in a series of character areas and urban blocks ensuring choice in both unit type and location while maintaining a sense of enclosure and belonging by providing clear identifiable residential zones.

Further to provision for a variety of unit types with multiple bed spaces, there is also a significant amount of diversity in terms of size, layout, storage, aspect, room dimensions, etc. within the proposed scheme. This is to ensure that the proposed development provides for various needs of its future residents catering for all age group demographics, also adaptable and flexible for their changing needs, be it, single professionals, young couples, small young families, older families, the elderly, those

looking to downsize, etc. For further details on the design, unit mix and a detailed breakdown of the proposed development, please refer to the enclosed Housing Quality Assessment prepared by Connolly Architects.

2.5.9 Communal and Public Open Space

There is a range of communal open space areas provided throughout the application site. In accordance with the LAP, a Neighbourhood Park has been designed which extends to 2.80 hectares. Furthermore, a total of 2.82 hectares of public open space is also being provided throughout the application site, which exceeds the 15% of the overall site area required under Objective OS02 of the Gorey & Environs Local Area Plan. Noted that this exceeds the public open space threshold provisioned within the County Development Plan at a rate of around 1 hectare per 150 dwellings or 10% of the site area.

The provisioned range of green open spaces within the scheme comprises of a large Parkland, several pocket parks, communal and habitat spaces. The Parkland is located to the north-western portion of the site, and is primarily the outcome of site natural setting and topography. Therefore, it is considered that provision for a large Parkland represents an optimum design solution and an efficient use of this portion of the lands, which also notably improves the level of amenity and quality of life within the subject lands and the wider area. In terms of functionality, the Parkland comprises of a large size play area featured with a variety of amenities. This co-locates with the playing pitch, MUGA, natural playing elements and a woodland walk. As mentioned earlier, several informal kickabout and soft zones are also proposed across the scheme, which are to be equipped for safe play. It is also envisaged that the play area associated with the childcare facility to be useable by the residents.

The proposed amenity spaces also benefit from passive surveillance from the proposed residential units and are carefully screened to permit visual transparency between the buildings while maintaining security for residents. Landscape design will play an important role in marrying the external amenity spaces together, and creating visual continuity between the scheme and its wider context.

In addition to the above, each residential unit benefits from the provision of adequately sized private open space in the form of gardens, balconies, or patios/terraces (designed in accordance with quantitative and qualitative standards), with the units at ground floor level provided with appropriate boundary treatments to ensure privacy and security whilst also providing visual interest and distinction between spaces. Appropriate separation distances have been provided between buildings to ensure privacy without compromising internal residential amenity of the apartments.



Figure 2-7. Hierarchy of Green Open Spaces throughout the Scheme (source: RMDA Landscape Architects)

2.5.10 Private Open Space

Private open space has been provided for all houses by way of private gardens to the rear or side of a house, or balconies/terraces for the apartments/duplexes. This meets and/or exceeds the requirements of the Wexford County Development Plan as shown on the compliance schedule/residential quality audit attached. Noted that the provision for private open spaces for the apartments is also in full compliance with the requirements of both Wexford County Development Plan and Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities 2020.

2.5.11 Car & Bicycle Parking

The proposed development provides for a total of 759 no. car parking spaces and a total of 480 no. bicycle spaces, in high quality, safe and accessible locations throughout the scheme. All houses have two car parking spaces either within or close to their curtilages. The hard standing has been designed to allow for one space to be adapted for use by disabled persons in the future. In addition, visitor spaces have been provided throughout the proposed development. Parking spaces for the apartments and duplexes have also been provided. The childcare facility, retail units and community rooms are also served by car parking.

Please refer to the enclosed documentation prepared by Connolly Architects and the Traffic and Transport Assessment prepared by Waterman Moylan Consulting Engineers for further details on the proposed car parking and bicycle parking to serve the proposed development.

2.5.12 Residential Amenities

The proposed development will also provide for a purpose-built single-storey detached childcare facility extending to c. 565 sqm to accommodate for approximately 89 children within the site with appropriate outdoor play space, drop off facilities, etc. The proposed development will also provide for a multi-purpose building comprising of 2 no. community rooms and 2 no. commercial units to serve for the local needs. A Childcare Provision Assessment Report has been prepared by Downey and submitted with this Strategic Housing Development application which demonstrates that there is sufficient capacity within area to cater for the proposed development and that the proposed childcare facility will sufficiently provide an appropriate level of childcare facilities to serve the future residents of the scheme. Please refer to the enclosed Childcare Provision Assessment Report, School Demand Assessment Report, Community Infrastructure and Social Audit, and the Statement of Consistency with Planning Policy report prepared by Downey for further information in this regard.

2.5.13 Materials & Finish

The detailed design of the buildings incorporates materials and finishes which are in common use in development in the environs of Kilnahue and will ensure a high-quality low maintenance environment into the future. External finishes for houses will be primarily finished in clay brickwork with painted render. Apartment and duplex buildings will be finished in brickwork and stone thus reducing maintenance. This will be combined within proprietary-colored panels to provide variation in color and reduce maintenance. Roofs to these buildings will be metal clad in an appropriate color to maintain visual consistency. Some proprietary cladding is used to define service and utility areas. Balcony guarding will generally be of frameless glass with an aluminum base frame. Ancillary fixtures such as rainwater goods will be color coated metal which will be visually complimentary to the uPVC windows and external doors. Please refer to the plans, sections, and elevation drawings and Architectural Statement prepared by Connolly Architects for further details on the designs, materials, and finishes. Please also refer to the photomontages and CGIs prepared by Digital Dimensions.

2.6 Construction and Phasing

The proposed development will be constructed in four phases, as follows:

PHASE 1

The site will be opened from the R725 Carnew Road and the first phase will comprise the Public Park and 71 Residential Units.

- The Landmark Entrance Apartment building (10 Units)
- One Duplex Block (8 Units)
- Six Hybrid Duplex Blocks (24 Units)
- Detached, Semi-detached and Terraced House types (29 Units)

PHASE 2

This phase will incorporate the completion of the Park Avenue, connection to Kilnahue Lane and construction of 120 Residential Units, Community and Retail facilities and the Childcare building.

- Kilnahue Lane Exit Building (10 Units)
- Two MAB Apartment Blocks (56 Units)
- One Urban Block of Semi-detached and Terraced (26 Units)
- 7 Hybrid Duplex Blocks (28 Units)

PHASE 3

In this phase the Lower and Middle Avenues will be completed and 158 Residential Units comprising three final Urban Blocks and three Apartment Buildings

- Two MAB Apartment Blocks (56 Units)
- Three Urban Blocks of Semi-detached and Terraced (78 Units)
- One Lower Apartment Block (24 Units)

PHASE 4

The final phase will be the completion of the Lower Apartment Buildings and completion of Taking-in charge works and procedures

- Three Lower Apartment Block (72 Units)

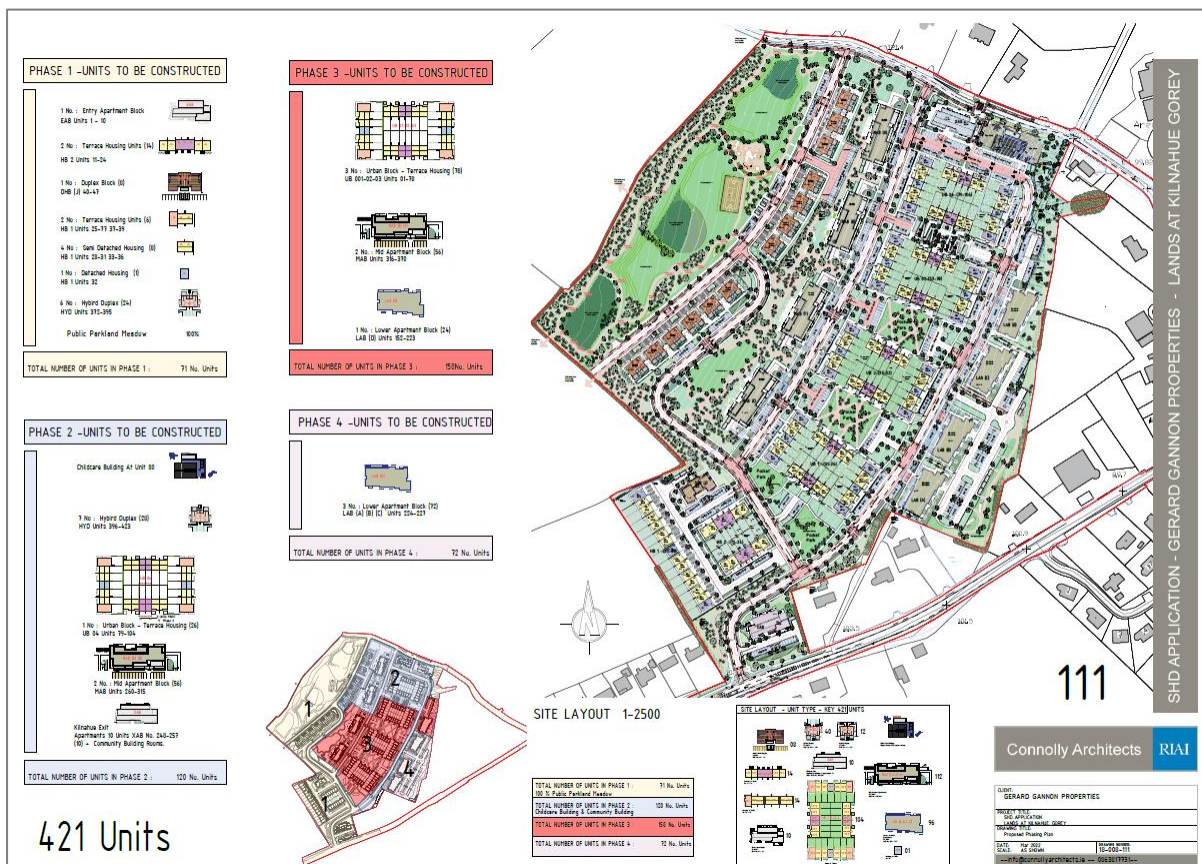


Figure 2-8. Proposed Phasing Plan

2.7 Emissions and Waste

Please refer to Chapter 7.0, 8.0 and Chapter 10.0 of this Environmental Impact Assessment Report for a full assessment of the impact of the proposed development on emissions and waste arising in relation to air, water, and climate. Please also refer to the enclosed Preliminary Construction, Demolition and Waste Management Plan prepared by Waterman Moylan as part of this SHD application. All spoil and waste material will be removed to an approved location and storage of construction materials in public areas will be minimised. Excavated material may be temporarily stored onsite, with excess material to be removed off-site. All oil/diesel stored on site will be in suitable containers which will be located in a purpose-built bunded area, which will provide containment in the event of accidental spills. Such waste will be handled and/or off appropriately in line with Waste Legislation.

2.8 Description of Reasonable Alternatives

This section of the EIAR focuses on alternatives that were considered during the preparation of this EIAR and planning application. It has been carried out in accordance with the Guidelines for Planning Authorities and An Bord Pleanála on Carrying out Environmental Impact Assessment (2018). In this regard, the Guidelines state the following:

“The Directive requires that information provided by the developer in an EIAR shall include a description of the reasonable alternatives studied by the developer. These are reasonable alternatives, which are relevant to the project and its specific characteristics. The developer must also indicate the main reasons for the option chosen taking into account the effects of the project on the environment. Reasonable alternatives may relate to matters such as project design, technology, location, size and scale.”

This section of the EIAR sets out an outline of the main alternatives that have been examined through the design and consultation stages of the planning process with the following headings:

- Alternative Locations
- Do-Nothing Scenario
- Alternative Uses
- Alternative Processes
- Alternative Designs/Layouts

2.8.1 Alternative Locations

Having regard to locations, it is established that the considerations of alternatives in a significant number of cases have already been addressed and decided at strategic planning level during the preparation and adoption of the relevant developments plan pertaining to a specific area (i.e., Wexford County Development Plan 2013-2019 and Gorey Town & Environs Local Area Plan 2017-2023). Furthermore, these plans will have been subject to Strategic Environmental Assessment which take into account the environmental considerations associated with, for example, the cumulative impact of an area zoned for industry on a sensitive landscape. The EIA Guidelines also state that the statutory development plans can establish project-level objectives or other mitigation that a subsequent site project and its EIAR should be cognisant of.

Having regard to the above, Downey note that the lands subject to this application and EIAR are located within the Wexford County Council administrative area and the majority of the subject lands are zoned as “R - Residential” zoning objective, however, a portion of the lands located along the north-eastern boundary of the site is zoned as “OS - Open Space & Amenity” zoning objective. Outlined in the Gorey & Environs LAP, these zoning objectives seek the following:

“R - Residential Zoning Objective: *To protect and enhance the residential amenity of existing and developed communities and to provide for new residential development, associated residential services and community facilities.*

OS - Open Space & Amenity Zoning Objective: *To protect and provide for recreation, open space and amenity areas.”*

As this site is mainly zoned for residential development within an established urban area and identified for housing delivery, it was not considered necessary to consider other sites. There have been a number of planning applications made on the site in recent years, all of which concluded that a residential development proposal on the overall lands was deemed acceptable. Furthermore, this is the only site within the control of the applicant in Gorey and as such no alternative site was available to them for this development.

2.8.2 Do Nothing Scenario

If the application site was left undeveloped, the subject lands would remain in agricultural use. A ‘Do Nothing’ scenario would not be consistent with the land use zoning pertaining to the lands and the objectives of the County Development Plan and Gorey Town & Environs LAP which seek to facilitate a new residential development on the subject lands as part of a wider development of Gorey. Given the subject site’s location within Gorey, as well as access to public transport and mobility, failure to develop these lands would significantly impair the quality of the urban landscape and viability for a mix of sustainable uses and amenities for existing and future residents. As such, it is considered that the “Do Nothing” scenario is not a suitable alternative option for the subject lands.

Furthermore, to not develop these zoned and serviced lands would not be consistent with national planning policy as set out in the National Planning Framework, Regional Spatial Economic Strategy and Urban Development and Building Height Guidelines. The level of demand for housing within the development boundary of the Gorey area, based on the future population growth predictions, would not be met.

2.8.3 Alternative Uses

As previously stated, the subject site is located within the functional area of Wexford County Council. As such, the development of the site is informed by the policies and objectives of the Wexford County Council Development Plan 2013-2019 and Gorey Town & Environs Local Area Plan 2017-2023. Under the current Gorey & Environs LAP, the majority of the subject lands are zoned as “R - Residential” zoning objective with a portion of the lands located along the north-eastern boundary of the site zoned as “OS - Open Space & Amenity” zoning objective.

The location of the subject lands within this zoning objective is such that the proposed development is considered permitted in principle uses under the pertaining zoning objective.

An alternative use, such as industrial development, was not considered in accordance with the land use zoning pertaining to the lands and as such was not considered to be a suitable or reasonable alternative.

2.8.4 Alternative Processes

An alternative process to that currently proposed was not considered relevant to this EIAR as the proposed development is for a residential project in excess of 100 units and therefore the planning application must be lodged to An Bord Pleanála as a Strategic Housing Development under the Planning and Development (Housing) and Residential Tenancies Act 2016.

2.8.5 Alternative Designs and Layouts

Background

The site is located in the Creagh Neighbourhood Framework and is identified as a Key Development Site in the Gorey Town and Environs Local Area Plan 2017-2023. The lands were designated for residential development in the Gorey Town & Environs Local Area Plan 2002-2008 and all subsequent plans. It has been in the ownership of the applicant since 2005.

A planning application for 241 dwellings which was submitted in 2007 was refused based primarily on being premature pending the construction of the Gorey Courtyard Wastewater Treatment Plant. A further reduced application was submitted in 2014.

On 20th February 2017, Wexford County Council decided to grant permission on the lands for residential development consisting of 219 no. dwelling units. This decision was appealed by third parties and the development was refused by An Bord Pleanála Reference PL26.448159.

The Project Team was instructed to enter into the Strategic Housing Development Process which has led to the submission of this SHD Application.

It must be noted that given the applicant's ownership of the entire development landholding subject to this project, the existing and planned infrastructure in place, and the zoning of the lands, there were no major alternative uses or processes that were considered reasonable. The alternatives to the proposed development considered during the course of the preparation of this EIAR were related to the overall layout and internal roads pertaining to the proposed scheme.

The design of the proposed project has evolved throughout the pre-application consultation process, resulting in alterations to the proposal. It is worth noting that the proposal may continue to develop following the application submission and continued consultation with relevant stakeholders. The main environmental issues that have most informed the chosen design relate to impact on trees and hedgerows, as well as visual impact. This shall be set out below.

2017 Proposal

The starting point in preparing a new design was to consider the reasons given by An Bord Pleanála for refusal on the 2017 application. It was clear that closer adherence to the Creagh Neighbourhood Framework was required. In particular, the Neighbourhood Park needed to be located along the north-western boundary and the use of a dominant spine road was undesirable.



Figure 2-9. 2017 Application Layout Plan

The design developed and matured over several iterations. In particular a detailed ‘cut and fill’ study was carried out to resolve the significant difficulties arising from the site topography. In the same context, consideration was given to the creation of character areas within the development which would be least affected by excessive slope.

Alternative 1: Layout for Section 247 Pre-Planning Meeting with Planning Authority

At the first Section 247 pre-planning meeting with Wexford County Council (October 2017), a proposal of 350 no. dwellings (comprising 120 no. houses, 60 no. duplex units and 170 no. apartments) in addition to 1 no. childcare facility and a public park was proposed.

Alternative 2: Layout for Stage 2 Pre-Application Consultation with An Bord Pleanála

Following on from the Section 247 pre-planning meeting with the Planning Authority, the design team made a number of amendments to the layout and proposed development. These included changes to the density and arrangement of the dwellings in order to achieve a balanced use of the lands with respect to the unique site setting, and existing development standards of the County Development Plan, Gorey & Environs LAP, the Creagh Neighbourhood Framework Plan contained therein. This provided for a proposal of 364 no. dwellings (comprising 128 no. houses, 64 no. duplex units and 172

no. apartments) in addition to 1 no. childcare facility and a public park. This was submitted to An Bord Pleanála in late 2018.



Figure 2-10. Stage 2 Site Layout Plan

However, the Board's Notice of Opinion from the tripartite consultation meeting as well as further feedback from the Planning Authority meant that Alternative 2 was subject to further amendments, which forms this current proposed development. Some of the key changes include:

- Increasing the density by provision for 421 no. residential units on the lands;
- Creating distinct character areas throughout the scheme by re-configuration of the layout;
- Enhancing the permeability of the site by providing for an interlinked layout and avoidance of cul-de-sacs as possible; and,
- Providing for surface water management and improved SuDS treatment.

November 2020

A Sketch Layout was generated examining the addition of further Apartment Buildings and relocation of the spine road to a lower level of the site.

December 2020

A more detailed sketch design comprising additional Duplex blocks. This sought to introduce additional shared areas.

Feb / Mar 2021

This layout creates coherent Urban Blocks and Connectivity. Two exits onto Kilnahue Lane provide improved and safer circulation and direct access to the Public Park. A middle avenue creates the urban centre to the scheme flanked by Apartment Buildings and Terraced Houses.

This scheme was improved in March by relocation of the Crèche to create accent at Kilnahue Entrance and location of double fronted Duplex Blocks which provide public aspect to Kilnahue Lane at Northeast corner of the site. This scheme proved to have a significant amount of surface parking to the detriment of the overall design.

April 2021

Design enhanced by redesign of Middle Avenue Apartment Buildings to remove car parking from street and add soft landscaping. 'Landmark' building designed to announce development at Carnew Road Entrance

June 2021

Scheme reduced after omission of a Duplex Block. Detailed landscaping design incorporated into overall layout.

July 2021

This involved redesign of parking layout serving the Eastern Apartment blocks at the lower end of the site and adjustment to surface water management proposals. Design of internal circulation and connectivity complete. The design of internal circulation and connectivity was completed. The layout was approved by client representatives.

September 2021

A Section 247 meeting was held with Wexford County Council on 2nd September 2021. In response to issues and concerns, raised the Scheme was reassessed and design enhanced to incorporate:

- A new 'Landmark' block has been located at the intersection of Kilnahue Lane and the Middle Avenue. This block incorporates Neighbourhood Retail Units and Multipurpose Community Rooms at street level and 10 no. Apartments at Upper levels.
- The Crèche has been relocated and redesigned to provide a building which responds well to the topography and the new streetscape.
- The final scheme incorporates 421 Residential Units

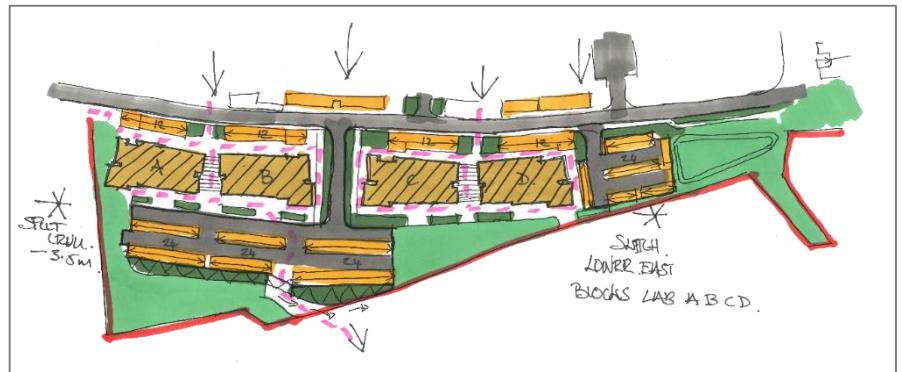


Figure 2-11. Various Design Iterations from 2020 -2021

Justification for Selecting Chosen Layout and Design

This EIAR has set out the evolution of the design of the scheme and alternatives, which has informed the chosen design of the development subject to this planning application.

- The chosen application layout represents an efficient use of appropriately zoned and serviced land that is located within proximity to the Gorey Town Centre.
- An optimum density achieved by factoring in elements such as the context and topography of site restricting the quantum of developable land also conforming the development standards of the County Development Plan and Gorey Town & Environs LAP.
- A high-quality residential development that meets the necessary provision of open spaces and residential amenity has been achieved.
- The layout provides for a variety of housing types and demographic needs that will create a sustainable community.
- Provision of a mix of uses and residential amenity facilities that would further reinforce a sustainable community, i.e., childcare facility, community space, and local-scale retail provision.
- Appropriate building heights to provide for an optimum density, but also well-integrated with the surrounding context.
- The provision of an entrance building located strategically off the Carnew Road, evoking a strong sense of place and announcing the western approach into Gorey town.
- An appropriate quantum of green spaces provisioned in a hierarchy of public park, pocket parks, and communal and habitat spaces which help blending the scheme into its context.
- The layout provides for good permeability and legibility.
- It does not give rise to any significant environmental impacts.
- The chosen layout will provide for a high-quality development that will help to aid housing supply in the Gorey and Wexford area.

2.9 Consideration of Cumulative Effects with Other Projects

The assessment in each EIAR Chapter has considered the cumulative impacts of construction and operational phases of the proposed project, in conjunction with surrounding developments completed, under construction, and those to be commenced. As it stands, there are no significant residential planning permissions in the immediate adjoining areas to the subject site, but there are smaller residential permissions permitted in the area, some of which have been constructed/are under construction. The aforementioned applications have been taken into consideration as part of this EIAR.

Additional planning applications in the wider vicinity of the lands include revisions and alterations to existing buildings or proposals or permission which have since expired. Such applications have no material consideration to the proposed development noting the minor nature of same.

2.10 Risk of Major Accidents and/or Disasters

The surrounding environment of the proposed project consists of a mix of low-rise residential, commercial, and educational facilities. There are no SEVESO II Directive sites (96/82/EC & 2003/105/EC) within 1km of the proposed project and therefore there is no risk of a major accident

or disaster in relation to a major chemical accident. In terms of the risk of a major accident and disaster, the vulnerability of the scheme is considered to be low given the location of the proposed scheme and the existing built environment surrounding the site. Therefore, the potential risk posed by a major accident and or disaster have been considered based on a low vulnerability of same. The overall risk is considered to be low.

3.0 PLANNING & DEVELOPMENT CONTEXT

3.1 Introduction

The subject site is located within the administrative area of Wexford County Council, for which the statutory Development Plan is the Wexford County Development Plan 2013-2019, the Gorey & Environs Local Area Plan 2017-2023 and the Creagh Neighbourhood Framework contained therein.

The subject lands are subject to national, regional, and local objectives and planning policies. The foregoing represents the relevant plans, guidelines, frameworks, and legislation for the Assessment in line with recital 32 and Article 4(4) of the EIA Directive and Article 299(1)(b)(ii)(II)(C) of the Planning and Development Regulations 2001 (as amended).

National Planning Policy

- Project Ireland 2040: National Planning Framework
- Project Ireland 2040: National Development Plan 2021-2030
- Rebuilding Ireland, An Action Plan for Housing and Homelessness (2016)
- Housing for All: A New Housing Plan for Ireland
- Affordable Housing Act 2021 & Housing Circular 28/2021
- Residential Densities in Towns and Villages (Circular Letter: NRUP 02/2021)
- Sustainable Residential Development in Urban Areas and Best Practice Urban Design Guidelines (2009)
- Delivering Homes, Sustaining Communities: Statement on Housing Policy (2007)
- Delivering Homes, Sustaining Communities Best Practice Guidelines – Quality Homes for Sustainable Communities (2007)
- Sustainable Urban Housing: Design Standards for New Apartments (December 2020)
- Urban Development and Building Heights Guidelines for Planning Authorities (December 2018)
- Childcare Facilities: Guidelines for Planning Authorities (2001)
- Childcare facilities operating under the Early Childhood Care and Education (ECCE) Scheme (Circular Letter: PL 3/2016)
- Retail Planning Guidelines (2012) and Retail Design Manual (2012)
- Smarter Travel: A Sustainable Transport Future
- Design Manual for Urban Roads and Streets (DMURS)
- National Cycle Manual (June 2011)
- EIA Directive
- Bird and Habitats Directive - Appropriate Assessment
- All-Ireland Pollinator Plan 2021-2025
- A Guide for Landowners to Managing Roadside Trees
- The Planning System and Flood Risk Guidelines (2009)
- National Adaptation Framework: Planning for a Climate Resilient Ireland
- Climate Action Plan (2019)

Regional Planning Policy

- Regional Spatial & Economic Strategy for the Southern Region 2019-2031
- Regional Transport Strategy of RSES for the Southern Region

Local Planning Policy

- Wexford County Council Development Plan 2013-2019
- Gorey Town & Environs Local Area Plan 2017-2023, and Creagh Neighbourhood Framework Plan (Appendix 1 of the LAP)

This chapter outlines the planning and development context for the proposed development with reference to the aforementioned principal planning policy documents. This chapter also sets out the development context and the planning history within which the proposed development should be considered and provides the policies, principles, and objectives within which the proposed development should be assessed. It is important to note that a full Statement of Consistency with Planning Policy has been prepared by Downey and is submitted under separate cover as part of the planning application. That report sets out a detailed analysis of the project's consistency with the relevant planning objectives as they pertain to the area and project.

3.2 Proposed Development

The proposed development can be summarised as a proposed Strategic Housing Development consisting of the demolition of the dilapidated structures on site and the construction of 421 no. residential units comprising duplex units, apartment units, and houses, all with associated car parking; a creche facility with outdoor play areas, 2 no. retail units and 2 no. community rooms, all with associated car parking; a new vehicular access onto Carnew Road (R725) and associated road upgrade works, new vehicular accesses onto Kilnahue Lane (L10112) and associated road upgrade works; landscaping including neighbourhood park, pocket parks, a playground and multi-purpose sports court; boundary treatments; public lighting; and all associated engineering and site works necessary to facilitate the development including proposed upgrade works to existing engineering infrastructure on Carnew Road, Kilnahue Lane, Main Street and Esmonde Street.

The full detailed description of development is contained in Chapter 2 of this EIAR, with the proposed development also discussed in detail in that chapter.

3.3 National Planning Context

3.3.1 Project Ireland 2040: National Planning Framework

The National Planning Framework is *“the Governments high-level strategic plan for shaping the future growth and development of our country out to the year 2040”*. It is a Framework to guide public and private investment, to create and promote opportunities for our people, and to protect and enhance our environment- from our villages to our cities and everything in between. It is stated within the National Planning Framework that supporting an increasing population and the future economic growth of the country as a whole, it is considered that a more strategic and managed approach is to be taken to ensure that targeted growth is to be accommodated within the boundaries of existing settlements.

According to the National Planning Framework, existing settlements need to accommodate a greater proportion of the growth it generates within their development boundaries and offer improved housing choice, transport mobility and quality of life. Achieving critical mass is crucial to Ireland's competitiveness.

The NPF states that *"the long-term vision for Ireland's housing future aims to balance the provision of good quality housing that meets the needs of a diverse population, in a way that makes our cities, towns, villages and rural areas good places to live now and in the future."*

It is outlined within the Plan that future homes are required to be located where people have the best opportunities to access a high standard quality of life. In Ireland, the location of housing has taken on a dispersed and fragmented character which has led to people living further away from their jobs and often being at a sizeable remove from important services such as education and healthcare. It is stated that it is important to *"prioritise the location of new housing provision in existing settlements as a means to maximising a better quality of life for people through accessing services, ensuring a more efficient use of land and allowing for greater integration with existing infrastructure"*.

The overarching emphasis of the NPF is on renewing and developing existing settlements, rather than continual expansion and sprawl of cities and towns out into the countryside, at the expense of town centres and smaller villages. In this regard, the NPF sets a target for at least 40% of all new housing to be delivered within the existing built-up areas of cities, towns, and villages on infill and/or brownfield sites. The provision of residential development on the subject site in this instance will therefore be in accordance with the NPF's target of 40% of new housing to be located within existing towns and for 50% of population growth to take place within Ireland's existing settlements, outside of the five larger cities.

Located as part of the Southern Region, The National Planning Framework 2040 states that, *"the big challenge for this Region in the period to 2040, will be to position its cities as more significantly scaled, while also more compact and attractive, acting as metropolitan drivers for the region as a whole and as effective complements to the economic strength of Dublin. Ensuring a balanced approach in activating and realising much underutilised potential in wider rural towns and dispersed communities will also be a priority"*.

It is an objective (Objective 1a) of the NPF that *"the projected level of population and employment growth in the Eastern and Midland Regional Assembly area will be at least matched by that of the Northern and Western and Southern Regional Assembly areas combined."* In this regard, targets for growing the Southern Region (Objectives 1b and 1c) means planning for *"340,000 - 380,000 additional people i.e. a population of almost 2 million and around 225,000 additional people in employment i.e. 880,000 (0.875m) in total."*

The National Planning Framework 2040 also indicates that in terms of facilitating development within Ireland's towns; *"In all cases, regional and local planning authorities must consider the varied growth potential of different types of settlement in accordance with National Policy Objective 7, as well as rural areas, and tailor a strategy to balance this accordingly. It is not expected that all towns, large or small, will each target the same level of growth to 2040 and targets set in accordance with the Framework and the Regional Spatial and Economic Strategies will be reviewed based on performance,*

by 2027. But all towns can and must grow over this period and some will be identified as having capacity for higher than average levels of growth”.

In relation to the NPF, it is important to note that national policy takes primacy over local policy, such as local county development plans.

3.3.2 Project Ireland 2040: National Development Plan 2021-2030

Project Ireland 2040 National Planning Framework (NPF), which sets the overarching spatial strategy for the next twenty years, includes the National Development Plan, which sets out the ten-year investment strategy. The recent Review of the NDP was led by the National Investment Office in the Department of Public Expenditure and Reform and was structured in two phases with associated outputs. The review was founded upon a strongly evidence-based approach, building upon the extensive data and analyses that have been produced by the NIO and by the work of IGEES and other policy units across other Government Departments and agencies, including other newly commissioned and targeted research. The NDP sets out funding to underpin key Government priorities. Specifically, allocations will support the realisation of critical goals laid out in Housing for All and will enable a step-change in investment to ameliorate the effects of climate change.

Outlined in the NDP, the key achievements of NPF over 2018-2021 and in relation to housing includes delivery of over 63,000 homes and 26,256 new social housing homes. To underpin NPF population targets, a detailed assessment of structural housing demand identifies demand for almost 400,000 new homes in Ireland between 2020 and 2031, or 33,000 new homes per annum. At city and county level, this is broken down to form a Housing Supply Target (HST) for each local authority area, to guide planning for future development.

The NPF housing supply target has been refined to reflect recent (2020) ESRI research based on NPF population growth, taking into account both existing demand and a legacy of undersupply to date. There is now a need to accommodate around 600,000 new households by 2040, with the Department of Housing planning to deliver an average of 33,000 homes per annum to 2030 including an average of 10,000 new social homes each year and an average of 6,000 affordable homes each year.

Set out in the NDP, public capital investment must, as a top priority, support the delivery and location of the homes that society will need over the next decade and beyond, while also ensuring that in the future the pattern of housing development underpins the development of more compact higher-density cities, towns and other areas. It is also a priority to enable infill development, with up to 50% of future housing in our cities and major urban centres and 30% elsewhere to be provided within existing built-up areas serviced by existing facilities and along high-capacity public transport corridors.

The proposed development will provide for a sustainable residential development on appropriately zoned lands, in a highly accessible location within the development boundary of Gorey, which would promote compact urban growth and a good quality of life. Furthermore, the proposed development provisions for a total of 421 no. residential units comprising 133 no. houses, 228 no. apartments, and 60 no. duplex units, as well as 1 no. childcare facility and a community centre. This will support compact growth of the town, and assist in achieving the objectives of the National Development Plan.

Gorey is an attractive, vibrant urban centre for people to live and work in, and is supported by high-quality physical and social infrastructure, as well as vast recreational amenities and the various sports clubs and centres within the area. Therefore, the proposed development will benefit from the built environment within the surrounding area of Gorey. The proposed development will also include 2 no. community rooms with 2 no. retail units to cater for the influx of population arising from the proposed development. In light of the above, it is submitted that the proposed development is consistent with the National Development Plan in this instance.

3.3.3 Rebuilding Ireland, An Action Plan for Housing and Homelessness (2016)

'Rebuilding Ireland, an Action Plan for Housing and Homelessness', provides a multi-stranded, action-oriented approach to achieving many of the Government's key housing objectives. The overarching aim of the Plan is to ramp up delivery of housing from its current undersupply across all tenures to help individuals and families meet their housing needs, and to help those who are currently housed to remain in their homes or be provided with appropriate options of alternative accommodation especially those families in emergency accommodation.

The Action Plan comprises of 5 key pillars which are addressing homelessness, accelerating social housing, building more homes, improving the rental sector and utilising existing housing. The Action Plan sets ambitious targets to double the annual level of residential construction to 25,000 homes and deliver 47,000 units of social housing in the period to 2021, while at the same time making the best use of the existing housing stock and laying the foundations for a more vibrant and responsive private rental sector.

Achieving the aim of accelerated delivery will contribute to the following core objectives:

- *Addressing the unacceptable level of households, particularly families, in emergency accommodation;*
- *Moderating rental and purchase price inflation, particularly in urban areas;*
- *Addressing a growing affordability gap for many households wishing to purchase their own homes;*
- *Maturing the rental sector so that tenants see it as one that offers security, quality and choice of tenure in the right locations and providers see it as one they can invest in with certainty;*
- *Ensuring housing's contribution to the national economy is steady and supportive of sustainable economic growth; and,*
- *Delivering housing in a way that meets current needs while contributing to wider objectives such as the need to support sustainable urban and rural development and communities and maximise the contribution of the built environment to addressing climate change.*

The provision of 421 no. residential units on the subject site will help the Government to achieve the objectives of the Housing Action Plan. Therefore, it is submitted that the proposed development is consistent with the policy in this regard.

3.3.4 Housing for All: A New Housing Plan for Ireland

The Housing for All: A New Housing Plan for Ireland states that Ireland's housing system is not meeting the needs of enough of our people, and therefore, it needs to increase new housing supply to an

average of at least 33,000 new units per year over the next decade. This will include over 10,000 social homes each year over the next five years, with 9,500 of these being new-builds, and an average of 6,000 affordable homes for purchase or rent. As per, Housing for All provides four pathways to achieving four overarching objectives:

- *Supporting Homeownership and Increasing Affordability;*
- *Eradicating Homelessness, Increasing Social Housing Delivery and Supporting Social Inclusion;*
- *Increasing New Housing Supply; and*
- *Addressing Vacancy and Efficient Use of Existing Stock.*

Outlined in the Plan, the State must act decisively to increase supply of both private and public housing. An average of 33,000 homes must be provided every year between now and 2030. Increased housing output is needed in all sectors - private, affordable, and social - to meet the needs of people in a wide variety of circumstances.

It is submitted that provision of 421 no. residential units on the subject site will help the Government to achieve the objectives of the Housing for All Plan. Therefore, it is considered that the proposed development is consistent with the development framework in this regard.

3.3.5 The Housing Agency Statement of Strategy 2022-2024

Launched in late January of 2022, the Housing Agency's Statement of Strategy, outlines how more affordable housing, increasing the supply of social and private homes and addressing social inclusion issues such as homelessness and ageing will be the priorities for the work of The Housing Agency over 2022-2024. The Statement of Strategy frames the work of The Housing Agency under three broad themes:

- Being a centre for housing knowledge;
- Bridging housing supply and demand; and,
- Building capacity for housing.

It also outlines how, over the coming years, the Housing Agency will use research, informed policy insights and data to work *"to achieve a housing system that meets the housing needs of the nation and promotes viable, sustainable communities"*.

The Housing Agency's Strategic Plan 2022-2024 has been framed in the context of supporting Housing for All, the Government's housing plan for Ireland and key trends in the housing system including:

- Diverse and changing housing needs for people living in Ireland.
- Long-term government policy and strategic planning for the Irish housing system.
- A continuing focus on building inclusive, sustainable communities.

It is submitted that provision of 421 no. residential units on an appropriately zoned land under Wexford County Development Plan 2013-2019 would help utilising an existing capacity within the built-up area of Gorey, and facilitate meeting the housing target for the area and the overall County. Therefore, it is considered that the proposed development is consistent with the foregoing Strategy in this regard.

3.3.6 Residential Densities in Towns and Villages (Circular Letter: NRUP 02/2021)

The purpose of this Circular, issued on 21st April 2021, is to provide clarity in relation to the interpretation and application of current statutory guidelines, in advance of issuing updated Section 28 guidelines that will address sustainable residential development in urban areas, later in 2021. It is considered important to address this matter in the context of both the need for significantly increased and more sustainable housing supply throughout Ireland, and national recovery from the Covid-19 pandemic.

Outlined in the Circular, while the *Sustainable Residential Development Guidelines* clearly encourage net densities in the 35-50 dwellings per hectare range within cities and larger towns, net densities of 30-35 dwellings per hectare may be regarded as acceptable in certain large town contexts and net densities of less than 30 dwellings per hectare, although generally discouraged, are not precluded in large town locations.

These “outer suburban” provisions apply to cities and larger towns, and the *Sustainable Residential Development Guidelines* define larger towns as having a population in excess of 5,000 people. Large towns therefore range from 5,000 people up to the accepted city scale of 50,000 people. Given the very broad extent of this range and variety of urban situations in Ireland, it is necessary for An Bord Pleanála and Planning Authorities to exercise discretion in the application and assessment of residential density at the periphery of large towns, particularly at the edges of towns in a rural context.

Accordingly, the full range of outer suburban density, from a baseline figure of 30 dwellings per hectare (net) may be considered, with densities below that figure permissible subject to Section 5.12 of the *Sustainable Residential Development Guidelines*. It is also clarified that in certain circumstances, the neighbourhood or district referred to in Section 5.12, may comprise a significant portion of a rural town.

Considering that the Census 2016 recorded a population of 9,822 people for Gorey, the town stands within the larger towns category, contributing to the development of the south-east region. Therefore, the proposed development of the subject lands is submitted to be consistent with the aforementioned Circular, which reinforces the strategic role of Gorey in the settlement hierarchy. The proposed development in this instance provides for a net density of c. 38 units per hectare, which is submitted to be appropriate and in accordance with the foregoing Circular.

3.3.7 Sustainable Residential Development in Urban Areas and Best Practice Urban Design Guidelines (2009)

This document reviews and updates the Residential Density Guidelines (1999), and its aim is to assist both planning authorities and developers in meeting certain standards in the design of residential development. The main objective of the ‘*Sustainable Residential Development in Urban Areas Guidelines*’ is to produce high-quality sustainable developments through providing:

- *Quality homes and neighbourhoods;*
- *Places where people actually want to live, to work and to raise families; and,*
- *Places that work - and will continue to work - not just for us, but for our children and for our children’s children.*

The Guidelines state that sustainability is about the integration of schools, community facilities, employment, transport, and amenities with the housing development process in a timely, cost-effective way.

In terms of planning for sustainable neighbourhoods, there is focus on *“planning at the district or neighbourhood scale within larger towns and cities, whether on brownfield or green-field sites”*. The Guidelines state that, *“national policy makes it clear that sustainability is not confined to the physical environment. Sustainability also includes the concept of stable, integrated communities, and planning for such communities must embrace both tangible issues - such as the timely provision of school places - and the intangible, such as people’s perception of what constitutes an attractive, secure environment in which to rear children. Planning objectives at the district/neighbourhood scale can thus be grouped under four main themes:*

- (a) Provision of community facilities;*
- (b) Efficient use of resources;*
- (c) Amenity/quality of life issues; and*
- (d) Conservation of the built and natural environment.”*

The document goes on to state that, *“sustainable neighbourhoods require a range of community facilities, and each district/neighbourhood will need to be considered within its own wider locality, as some facilities may be available in the wider area while others will need to be provided locally”*. It then outlines the importance of the provision of schools, community centres, healthcare facilities and district/neighbourhood centres use to the sustainability of communities.

The subject site is a Tiered 1 Serviced Zoned land within Gorey LAP lands, and is located c. 2km to the west of the railway station, southwest of Gorey Town Centre between the Kilnahue Lane and the Carnew Road which leads from the town centre. Gorey Town Centre is characterised as a vibrant centre providing for high-quality physical and social infrastructure, as well as vast recreational amenities and the various sports clubs and centres within the area. The proposed development also provides for 2 no. community rooms and 2 no. retail units, which among other surrounding amenities will further support the required level of community amenities. The proposed scheme itself provides for 1 no. childcare facility with an overall area of 565 sqm catering to c. 89 children. This is considered to cater for the influx of population arising from the proposed scheme and its wider context. For further information, please refer to the enclosed *Childcare Provision Assessment Report* prepared by Downey.

Therefore, the existing level of services within the surrounding area, and the capability of the site, as a Tier 1 Serviced Zoned Land, to be connected to the existing development services, and inclusion of a creche facility within the proposed development are considered to provide for an efficient use of resources leading to a sustainable development of the lands.

In relation to amenity/quality of life issues, *“public open space can have a positive impact on physical and mental well-being as it provides spaces to meet, interact, exercise, and relax. It needs to be appropriately designed, properly located, and well maintained to encourage its use. It is one of the key elements in defining the quality of the residential environment. Apart from the direct provision of active and passive recreation, it adds to the sense of identity of a neighbourhood, helps create a community*

spirit, and can improve the image of an area (especially a regeneration area). Well-designed open space is even more important in higher density residential developments". The proposed development provides for a large parkland with an overall area of 8.2 ha within the residential scheme whilst being in close proximity to Gorey Town & District Park, Ramsfort/Creagh Woods, all located within 2-3 km distance from the subject lands. The proposed parkland is suggested to be a great amenity to be delivered by the applicant.

Furthermore, the proposed development would provide for a hierarchy of green open space within and around the development site with respect to distinct setting and topography of the site. This includes a range of open space categories comprising of a parkland, a number of pocket parks, communal and habitat spaces to amplify the design and improve the level of amenity and quality of life within the subject lands and the wider area.

In terms of the development itself, the aim of the Guidelines is to set out the key planning principles which should be reflected in development plans and local area plans and which should guide the preparation and assessment of planning applications for residential developments in urban areas. The Guidelines support a plan-led approach to development in accordance with the Planning and Development Act, 2000 (as amended) and state, *"the scale, location and nature of major new residential development will be determined by the development plan, including both the settlement strategy and the housing strategy"*.

Under Gorey Town and Environs Local Area Plan 2017-2023, the subject site is designated as "R - Residential" zoning objective, where residential, childcare, and retail facilities are a permitted in principle land use. This is further discussed in the Local Policy and Guidelines section of the following report.

The Guidelines also support increased residential densities particularly for sites located in "Outer Suburban/Greenfield" sites, particularly for such sites on the periphery of cities or larger towns, stating, *"the greatest efficiency in land usage on such lands will be achieved by providing net residential densities in the general range of 35-50 dwellings per hectare and such densities (involving a variety of housing types where possible) should be encouraged generally"*.

The application site is characterised with a unique setting which appears as both an opportunity to deliver a distinct development fused with topographical feature of the site, and a constraint which restricts the quantum of developable land to provide for housing and directly associated uses. This has been addressed through creating a balance of residential and open green spaces with respect to site setting properties in order to deliver an efficient use of the lands. Given this distinct site setting and the requirements of relevant planning and policy guidelines, the application site will achieve a net density c. 38 units per hectare. This has been calculated as per the provided guidance on the Appendix A of the Guidelines.

- Overall Site Area Subject to this SHD¹: 19.17 ha

¹ It is noted that the overall land area within the ownership of the applicant is 15.3 ha, and the application site also includes engineering work to Carnew Road (R725), Kilnahue Lane, Main Street and Esmonde Street.

- Net Site Area: 11.15 ha
- Net Density: 421 units ÷ 11.15 ha = 37.8 uph

This is considered to provide for an efficient use of a Tier 1 Serviced Lands, facilitating sustainable development of the lands, and therefore, accords with the requirements of the *“Sustainable Residential Development in Urban Areas and Best Practice Urban Design Guidelines”*.

The design of the proposed development has placed considerable emphasis on the context of the site and location as well as the surrounding built environment. The proposed development successfully incorporates the criteria of the *‘Urban Design Manual - A Best Practice Guide’* and its 12 criteria, including: *Context, Connections, Inclusivity, Variety, Efficiency, Distinctiveness, Layout, Public Realm, Adaptability, Privacy/Amenity, Parking, and Detailed Design*, of which Planning Authorities are recommended to assess planning applications. It is evident that the form, layout, and architectural and landscaping design of the proposed development have been informed by the development’s place and time. Well-designed homes in the right locations are fundamental to building strong, sustainable communities. Such communities will ensure Ireland’s continued success in attracting and generating investment and improving the quality of life for residents.

Downey are of the considered opinion that the proposed development represents a development that has been carefully and appropriately designed, addressing unique site setting properties with respect to its wider context which would integrate successfully with its environs. The proposed development has had regard to the surrounding environment and carefully assesses the proposal in light of same. The development positively contributes to the character and identity of the surrounding neighbourhood. The proposed scheme is also considered to be of an appropriate density which will help to support efficient public transport. It is submitted that the proposed development would be a positive addition to the surrounding built environment of Gorey and to the identity of the locality. Furthermore, it is considered that the proposed buildings will meet the aspirations of a range of people and the design and layout of such allows easy access by all. For further information on the proposed development’s consistency with the *“Urban Design Manual”*, please refer to the Architectural Statement (Architects Report) prepared by Connolly Architects.

3.3.8 Delivering Homes, Sustaining Communities: Statement on Housing Policy (2007)

The Department’s policy statement *‘Delivering Homes, Sustaining Communities’* provides the overarching policy framework for an integrated approach to housing and planning. The statement notes that demographic factors will continue to underpin strong demand for housing, which in turn will present considerable challenges for the physical planning of new housing and the provision of associated services. The quality of the housing environment is recognised as being central to creating a sustainable community. Sustainable neighbourhoods are areas where an efficient use of land, high-quality design, and effective integration in the provision of physical and social infrastructure combine to create places people want to live in.

The *‘Delivering Homes, Sustaining Communities’* policy statement is accompanied by Best Practice Guidelines entitled *‘Quality Housing for Sustainable Communities’*. The purpose of these Guidelines is to promote high standards in the design and construction and the provision of residential units and services in new housing developments. Best use of land is encouraged and optimal utilisation of

services and infrastructure in the provision of new housing; point the way to cost effective options for housing design that go beyond minimum codes and standards; promote higher standards of environmental performance and durability in housing construction; seek to ensure that residents of a new housing scheme enjoy the benefits of first-rate living conditions in a healthy, accessible and visually attractive environment; and provide homes and communities that may be easily managed and maintained.

This Strategic Housing Development application is accompanied by the Architectural Statement and a Housing Quality Assessment (HQA) prepared by Connolly Architects, which demonstrates the proposed development is compliant with the relevant standards in the 'Quality Housing for Sustainable Communities' document, Wexford County Development Plan 2013-2019, and the Gorey Town & Environs Local Area Plan 2017-2023.

3.3.9 Delivering Homes, Sustaining Communities Best Practice Guidelines – Quality Homes for Sustainable Communities (2007)

The aim of these Guidelines is to identify principles and criteria that are important in the design of housing and to highlight specific design features, requirements and standards that have been found, from experience to be particularly relevant. The guidelines set out some recommended standards in terms of space provision and room sizes, etc.

The proposed scheme has been cognisant of the need to facilitate a high standard of living for future occupants, while representing a proposal that is conducive to complimenting and augmenting the established residential character of the surrounding area. In this regard it is noted that all of the residential units have been designed to comply with the room standards as set out in these Guidelines, as well as in the County Development Plan. Connolly Architects have also prepared an Architectural Statement for this scheme and is submitted under a separate cover. This outlines the rationale behind the design of the scheme and how it will contribute to a positive and attractive residential scheme.

This SHD planning application is accompanied by a Housing Quality Assessment (HQA) document, which has been prepared Connolly Architects, which illustrates how the proposed development will comply with the required standards that have been set out in this assessment.

3.3.10 Sustainable Urban Housing: Design Standards for New Apartments (December 2020)

The 'Sustainable Urban Housing: Design Standards for New Apartments' build on the content of the 2015 and 2018 apartment guidance, much of which remains valid, particularly with regard to design quality safeguards such as internal space standards for apartments, internal storage and amenity space. The Guidelines state that, "in the longer term to 2040, the Housing Agency has identified a need for at least 45,000 new homes in Ireland's five cities (Dublin, Cork, Limerick, Galway and Waterford), more than 30,000 of which are required in Dublin City and suburbs, which does not include additional pent-up demand arising from under-supply of new housing in recent years". It is also stated that it is "critical to ensure that apartment living is an increasingly attractive and desirable housing option for a range of household types and tenures."

The Guidelines state that Ireland is a long way behind European averages in terms of the numbers of households living in apartments, especially in our cities and larger towns.

Downey Planning are of the professional opinion that the proposed development complies with the requirements of the Sustainable Urban Housing: Design Standards for New Apartments. The application includes Housing Quality Assessments, a detailed daylight, sunlight and internal light analysis report, and Building Lifecycle Report in accordance with Chapter 6 of the Guidelines. It is submitted that the proposed development will help to meet the current demand for apartment type developments.

3.3.11 Urban Development and Building Heights Guidelines for Planning Authorities (December 2018)

The “*Urban Development and Building Heights, Guidelines for Planning Authorities*” are intended to set out national planning policy guidelines on building heights in relation to urban areas, building from the strategic policy framework set out in the National Planning Framework 2040 (NPF). This document recognises that in recent years local authorities, through the statutory plan processes, have begun to set generic maximum height limits. However, such limits if inflexibly and unreasonably applied can undermine national policy objectives to provide more compact urban forms as outlined in the National Planning Framework and instead can continue unsustainable patterns of development.

The guidelines reinforce that “*a key objective of the NPF is therefore to see that greatly increased levels of residential development in our urban centres and significant increases in the building heights and overall density of development is not only facilitated but actively sought out and brought forward by our planning processes and particularly so at local authority and An Bord Pleanála levels*”.

The document states that it is critically important that development plans identify and provide policy support for specific geographic locations or precincts where increased building height is not only desirable but a fundamental policy requirement. Locations with the potential for comprehensive urban development or redevelopment (e.g. brownfield former industrial districts, dockland locations, etc.) should be identified where, for example, a cluster of higher buildings can be accommodated as a new neighbourhood or urban district or precinct.

In light of the above, the guidelines go on to further state that “*newer housing developments outside city and town centres and inner suburbs, i.e. the suburban edges of towns and cities, typically now include town-houses (2-3 storeys), duplexes (3-4 storeys) and apartments (4 storeys upwards). Such developments deliver medium densities, in the range of 35-50 dwellings per hectare net*”. As part of these guidelines, there are a number of Strategic Planning Policy Requirements including:

“SPPR 3: It is a specific planning policy requirement that where; 1. an applicant for planning permission sets out how a development proposal complies with the criteria above; and 2. the assessment of the planning authority concurs, taking account of the wider strategic and national policy parameters set out in the National Planning Framework and these guidelines; then the planning authority may approve such development, even where specific objectives of the relevant development plan, local area plan or planning scheme may indicate otherwise”.

This planning application has taken into consideration and outlined through appropriate documentation and plans, how the proposed development accords with the assessment criteria

outlined in SPPR3, including daylight/shadow studies, ecological assessments, Housing Quality Assessments, DMURS and also with national planning policy including that of the NPF.

“SPPR 4: It is a specific planning policy requirement that in planning the future development of greenfield or edge of city/town locations for housing purposes, planning authorities must secure: 1. the minimum densities for such locations set out in the Guidelines issued by the Minister under Section 28 of the Planning and Development Act 2000 (as amended), titled “Sustainable Residential Development in Urban Areas (2007)” or any amending or replacement Guidelines; 2. a greater mix of building heights and typologies in planning for the future development of suburban locations; and 3. avoid mono-type building typologies (e.g. two storey or own-door houses only), particularly, but not exclusively so in any one development of 100 units or more.”

The proposed development in this instance provides for a net density of c. 38 units per hectare, which is in accordance with relevant national and local policy guidelines. Furthermore, there is an appropriate mix of housing typologies and heights ranging from two storey houses, three to four storey apartment and duplex units. The development is therefore in accordance with SPPR 4 of these Guidelines, and it is considered that the proposed development is consistent with the aforementioned guidelines.

3.3.12 Childcare Facilities: Guidelines for Planning Authorities (2001)

Government policy on childcare is to increase the number of childcare places and facilities available and to improve the quality of childcare services for the community. These Guidelines for Planning Authorities on Childcare Facilities provide a framework to guide both local authorities in preparing development plans and assessing applications for planning permission, and developers and childcare providers in formulating development proposals.

For housing schemes, the Guidelines provide a benchmark provision of 1 no. 20 space childcare facility per 75 dwellings. The threshold for provision should be established having regard to existing location of facilities and the emerging demography of the area where new housing is proposed. The recommendations provided within the Guidelines must be considered in the context of the ‘Sustainable Urban Housing: Design Standards for New Apartments’ (Dec. 2020), which state that:

“Notwithstanding the Planning Guidelines for Childcare Facilities (2001), in respect of which a review is to be progressed, and which recommend the provision of one child-care facility (equivalent to a minimum of 20 child places) for every 75 dwelling units, the threshold for provision of any such facilities in apartment schemes should be established having regard to the scale and unit mix of the proposed development and the existing geographical distribution of childcare facilities and the emerging demographic profile of the area.”

A Childcare Provision Assessment Report has been prepared by Downey and submitted with this Strategic Housing Development Application which demonstrates that there is sufficient capacity within Gorey town to cater for the proposed development and that the proposed childcare facility

with an overall area of 565 sqm which is capable of catering for c. 89 no. children will sufficiently provide an appropriate level of childcare facilities to serve the future residents of the scheme and its wider area.

In light of the above, it is submitted that the current provision of childcare facilities in the area, coupled with the proposed facility on site, is consistent with the Childcare Facilities Guidelines.

3.3.13 Retail Planning Guidelines (2012) and Retail Design Manual (2012)

The Retail Planning Guidelines, which were first issued in 2000 and subsequently revised in 2005, and subsequently the third iteration of the Guidelines were published in 2012 accompanied by the Retail Design Manual (2012), providing the strategic policy framework for the spatial distribution of new retail development. Therefore, the Guidelines provide a comprehensive framework to guide both local authorities in preparing development plans and assessing applications for planning permission, and retailers and developers in formulating development proposals.

The guidelines specifically state that local retail units such as corner shops or shops located in local or neighbourhood centres serving local residential districts perform an important function in urban areas. Where a planning authority can substantiate the local importance of such units in defined local centres, they should safeguard them in development plans, through appropriate land-use zoning. Development management decisions should support the provision of such units, particularly where they encompass both food-stores and important non-food outlets such as retail pharmacies, and have significant social and economic functions in improving access to local facilities especially for the elderly and persons with mobility impairments, families with small children, and those without access to private transport. The guidelines identify five key objectives, of equal weight, which are as follows:

- to ensure that in future all Development Plans incorporate clear policies and proposals for retail development,
- to facilitate a competitive and healthy environment for the retail industry of the future,
- to promote forms of development which are easily accessible, particularly by public transport and in a location which encourages multi-purpose shopping, business and leisure trips,
- to support the continuing role of town and district centres, with
- a presumption against large retail centres located adjacent or close to existing, new or planned national roads/motorways.

The Guidelines clearly acknowledge that it is critical for the proper planning and sustainable development of an area that new retail development is located at the optimum location having regard to the type of retail offering and the context of the existing environs.

With respect to the final Section 247 meeting with Wexford County Council in September 2021, it is submitted that the proposed development provides for 2 no. small retail units to cater for the needs of this new community. This is considered to be consistent with the foregoing Guidelines.

3.3.14 Smarter Travel: A Sustainable Transport Future

In summary, *'Smarter Travel: A Sustainable Transport Future'* states that, "to achieve the vision of a sustainable transport system, individual lifestyles will have to change and collectively we will have to work progressively on a range of solutions which deal with apparently conflicting goals: economic growth, reduced emissions, less use of motorised transport and better accessibility."

The 5 key goals of this transport policy are as follows:

- *Improve quality of life and accessibility to transport for all and, in particular, for people with reduced mobility and those who may experience isolation due to lack of transport;*
- *Improve economic competitiveness through maximising the efficiency of the transport system and alleviating congestion and infrastructural bottlenecks;*
- *Minimise the negative impacts of transport on the local and global environment through reducing localised air pollutants and greenhouse gas emissions;*
- *Reduce overall travel demand and commuting distances travelled by the private car; and,*
- *Improve security of energy supply by reducing dependency on imported fossil fuels.*

It is considered that the proposed development complies with "*Smarter Travel: A Sustainable Transport Future*".

The subject lands are strategically located circa 1.5 km of Gorey Main Street and 2 km of the Gorey railway station, within cycling and walking distance of the Local Link Wexford 389 bus service. Additionally, with the proposed vehicular access routes onto Carnew Road and Kilnahue Lane, accessibility of the site to the wider area and its internal permeability is expected to notably be enhanced. These routes provide direct access to the proposed parkland to the north-western section of the lands. There are also proposals to include improved pedestrian and cycle connections to the town centre and within the application site itself.

Moreover, the proposed development is to provide considerable secure, covered bicycle parking for future residents and visitors, particularly to residents of the apartment blocks, where it will encourage use of sustainable modes of transportation.

Therefore, it is considered that the proposed development is consistent with this national transport policy and will assist in its implementation. Please refer to the enclosed Traffic and Transport Assessment prepared by Waterman Moylan Engineering Consultants for further details in this regard.

3.3.15 Design Manual for Urban Roads and Streets (DMURS)

The *'Design Manual for Urban Roads and Streets'* (DMURS) 2013 and as updated in 2019, sets out design guidance and standards for constructing new and reconfigured existing urban roads and streets. It also sets out practical design measures to encourage more sustainable travel patterns in urban areas. The transport documentation prepared by Waterman Moylan Engineering Consultants provide further details in respect of the compliance of the proposed development with the provision

of DMURS. Please refer to the pertaining documents prepared by Waterman Moylan Engineering Consultants for further information in this regard.

3.3.16 National Cycle Manual (June 2011)

The '*National Cycle Manual*' 2011 embraces the Principles of Sustainable Safety as this will offer a safe traffic environment for all road users including cyclists. It offers guidance on integrating the bike in the design of urban areas. The Manual challenges planners and engineers to incorporate cycling within transport networks more proactively than before.

Outlined in the Manual, many residential and access streets already offer a high quality of service to cycling. Cycling two-abreast on quiet, interesting, well-surfaced streets and roads can be attractive to cyclists. In many cases there is no physical infrastructure involved, other than the self-evident and self-enforcing nature of the environment.

The Manual also gives guidance on the minimum number of spaces which should be provided initially at new private and public facilities in urban areas. For housing developments, this is stated to be:

- 1 no. private secure bicycle space per bed space (note - design should not require bicycle access via living area), minimum 2 spaces; and
- 1 visitor bicycle space per two housing units.

The following gives an overview of the varying characteristics of parking at residential areas that should be considered in determining the most appropriate parking facility.

- Convenience is essential for frequently used bicycles, and preferably not via living areas;
- Private parking should accommodate residents and visitors; and,
- Shared parking facilities can be suitable for multiple dwellings (e.g. apartment complex).

It is submitted that the proposed development would provide for full pedestrian and cycle links to the local area network, and these will provide safe access to the nearby primary and secondary schools which will serve the residents. Secure Bicycle Parking will be provided for each unit in the development in compliance with Section 4.17 of the Design Standard for New Apartments (December 2020). This will be within the curtilage of House and Duplex Units and in lockable Bicycle Stores in each Apartment Block. Please refer to the enclosed Traffic and Transport drawings and documentation prepared by Waterman Moylan Engineering Consultants for further details in this regard.

3.3.17 Bird and Habitats Directive - Appropriate Assessment

The proposed development has been screened for Appropriate Assessment in accordance with the requirements of Article 6(3) of the EU Habitats Directive (92/32/EEC). OPENFIELD Ecological Services has prepared a report for Screening for Appropriate Assessment for the proposed development. This screening report has evaluated the proposed development to determine whether or not significant negative impacts on Natura 2000 sites are likely to arise by virtue of its construction and use.

The screening concludes that no significant effects are likely to arise to any Natura 2000 site either alone or in combination with other plans or projects.

For further information in this regard, please refer to the Appropriate Assessment Screening Report prepared by OPENFIELD Ecological Services. It is also noted that Brian Keeley has undertaken a bat and badger survey of the site which are included as part of this planning application to An Bord Pleanála.

3.3.18 All-Ireland Pollinator Plan 2021-2025

The All-Ireland Pollinator Plan is a shared plan of action which is to bring about a landscape where pollinators can flourish over 2021-2025. To achieve this, the Plan sets out six objectives; (1) Making farmland pollinator friendly, (2) Making public land pollinator friendly, (3) Making private land pollinator friendly, (4) All-Ireland Honeybee Strategy, (5) Conserving rare pollinators, and (6) Strategic coordination of the Plan.

The proposed development has taken into consideration the All-Ireland Pollinator Plan, reflecting the relevant guidelines and proposed measures by retention of the some of the existing hedgerows partially enhanced by woodland buffer planting, native plant material, and provision for wildflower meadow areas and habitat areas, in particular within the proposed parkland. This is further complemented by an integration of public realm and natural context through providing for natural play areas. Please refer to the Landscape Rationale Report prepared by RMDA Landscape Architects + Consultants for further details on the inclusion of the Plan guidelines within the proposed landscape of the scheme.

3.3.19 The Planning System and Flood Risk Guidelines (2009)

These Guidelines require the planning system at all levels to avoid developments in areas at risk of flooding, particularly floodplains, except where there are no suitable alternative sites available in areas at lower risk that are consistent with the objectives of proper planning and sustainable development. Where such development has to take place, in the case of urban regeneration for example, the type of development has to be carefully considered and the risks should be mitigated and managed through location, layout and design of the development to reduce flood risk to an acceptable level. Applicants are advised to carefully examine their development proposals to ensure consistency with the requirements of these Guidelines including carefully researching whether there have been instances of flooding or there is the potential for flooding on specific sites and to carry out a site-specific flood risk assessment. In accordance with these Guidelines, Waterman Moylan Engineering Consultants have carried out a flood risk assessment of the subject site. The site has been assessed in accordance with the Flood Risk Management Guidelines, with appropriate mitigation measures proposed. Therefore, it is considered that the proposed development is consistent with the requirements of this national flood risk management policy. For further information in this regard, please refer to the enclosed Flood Risk Assessment prepared by Waterman Moylan Engineering Consultants.

3.3.20 National Adaptation Framework: Planning for a Climate Resilient Ireland

In accordance with the '*Climate Action and Low Carbon Development Act 2015*', this National Adaptation Framework (NAF) specifies the national strategy for the application of adaptation measures in different sectors and by local authorities in their administrative areas in order to reduce the vulnerability of the State to the negative effects of climate change and to avail of any positive

effects that may occur. This NAF and its successors will set out the context to ensure local authorities, regions and key sectors can assess the key risks and vulnerabilities of climate change, implement climate resilience actions and ensure climate adaptation considerations are mainstreamed into all local, regional and national policy making.

The 'Built Environment and Spatial Planning' section within this Framework recognises that, "*climate change considerations need to be taken into account as a matter of course in planning-related decision making processes and that the deepening of adaptation considerations in the planning and building standards processes is considered the most appropriate way of increasing the resilience of the built environment*". Furthermore, "*effective planning reduces vulnerability to the negative effects of climate change by integrating climate considerations into decision making in order to avoid inappropriate forms of development in vulnerable areas and promoting compact development in less vulnerable areas*". It is important to mention that this Framework envisions 'flood resilience' and 'access to wildlife and green space' as no-regret benefits of effective adaptation which would continue to be worthwhile regardless of future climate scenarios.

As such, the proposed development has taken into consideration the context of the site and it can be noted that an assessment of Flood Risk has been prepared by Waterman Moylan Engineering Consultants, with appropriate mitigation measures proposed. Thus, the proposed development with access to high-quality green space and introduction of best practice energy efficiency measures as required to meet the Energy Strategy and Building Regulations and promoting a compact urban form for 'less vulnerable areas' is consistent with this national framework.

3.3.21 Climate Action Plan (2019)

Climate disruption is already having diverse and wide-ranging impacts on Ireland's environment, society, economic and natural resources. The Climate Action Plan 2019 sets out an ambitious course of action over the coming years to address this issue. The Plan clearly identifies the nature and scale of the challenge. It outlines the current state of play across key sectors including Electricity, Transport, Built Environment, Industry and Agriculture and charts a course towards ambitious decarbonisation targets. The Plan sets out governance arrangements including carbon-proofing policies, establishment of carbon budgets, a strengthened Climate Change Advisory Council and greater accountability to the Oireachtas.

The Plan clearly recognises that Ireland must significantly step up its commitments to tackle climate disruption. The leadership role both the Government and public bodies can play in taking early action on climate is fundamental to achieving our decarbonisation goals. The Plan notes that the built environment accounted for 12.7% of Ireland's greenhouse gases in 2017. It is important that we improve the energy efficiency of our buildings, including our homes, workplaces, and schools by meeting higher energy performance standards and by increasing retrofit activity. This will not only reduce Ireland's dependence on fossil fuels, but will also improve our living standards by making our buildings more comfortable, healthier, safer, and less costly to heat.

Our buildings are 70% reliant on fossil fuels, including oil fired boilers; over 80% of our homes and other buildings assessed for their BER have a rating of C or worse; and the current annual retrofit

activity for existing stock is far too limited (approximately 23,000, mainly shallow, retrofits). A hierarchy of the most cost effective investments underpin this, including:

- Improving the fabric of buildings
- District heating in commercial buildings
- Switching from oil burners to heat pumps
- Setting new building standards.

All homes in the development will be designed to achieve a Building Energy rating of at least A2 to comply with the EU Nearly Zero Energy Building (NZEB) Regulations and meet the challenges of climate change. As such, the proposed development has taken into consideration the Climate Action Plan and measures have been included within the design of the development to reduce carbon emissions in line with the requirements of the Action Plan.

3.4 REGIONAL POLICY AND GUIDELINES

The key provisions of the regional planning policy as it relates to the proposed development are now set out in the following sections. The key regional policy of relevance includes:

- Regional Spatial & Economic Strategy for the Southern Region 2019-2031; and,
- Transport Spatial and Economic Strategy for the Southern Region.

3.4.1 Regional Spatial & Economic Strategy for the Southern Region 2019-2031

The Regional Spatial and Economic Strategy (RSES) was published by the Southern Regional Assembly. The RSES outlines the long-term regional level strategic planning and economic framework in support of the National Planning Framework for the period 2019-2031. The RSES identifies regional assets, opportunities, pressures and constraints and provides a framework for investment to better manage spatial planning and economic development throughout the Southern Region. The RSES is tasked with the development of planning policy for future housing needs in the region upon consideration of the availability of land, resources, environment, and infrastructure capacity.

In conjunction with NPF, the RSES innovative approach to ensure managing the growing population in a sustainable way is securing long-term transformational and rejuvenation-focused city growth through Metropolitan Strategic Area Plans (MASPs) and the identification of Key Towns. The Regions network of Key Towns strengthens the urban structure across our Region, align with NPO 7 of the NPF and are a complement to the three pillars of our cities and metropolitan areas which are the primary drivers of population and employment growth in the Region.

It is envisaged that the Key Towns will be a focus for significant growth, i.e., planning for a population growth of more than 30% by 2040. The nature, scale and phasing of this growth will be determined by local authorities depending on a capacity analysis of each town. As stated in the RSES, the Key Towns are defined by either, “*large population scale urban centre functioning as self-sustaining regional drivers*”, or “*strategically located urban centres with accessibility and significant influence in a sub-regional context*”. In order to combat and provide for compact residential development, the RSES outlines a number of key Regional Policy Objectives that pertain to the NPF targets. The key Regional Policy Objectives applicable to the development proposal are the following:

“Regional Policy Objective (RPO) 11-a - Local Authorities are supported in targeting growth of more than 30% for each Key Town subject to capacity analysis and sustainable criteria under Section 3.3 A Tailored Approach, RPO 3 Local Authority Core Strategies and the sustainable requirements under the following sub sections of RPO 11 Key Towns. The appropriate level of growth is to be determined by the Core Strategy of Development Plans.”

“Regional Policy Objective (RPO) 11-d - To support and promote vibrant, culturally-rich and revitalised Key Towns with enhanced social inclusion, engaged and active voluntary, non-profit and social enterprise sectors, sustainable neighbourhoods and a high level of environmental quality to ensure an excellent quality of life for all.”

“Regional Policy Objective (RPO) 11-k. To plan increasing population growth in all Key Towns on a phased basis in collaboration with Irish Water, the local authority and other stakeholders to ensure that the assimilative capacity of the receiving environment is not exceeded and that increased wastewater discharges from population growth does not contribute to degradation of water quality and avoids adverse impacts on the integrity of water dependent habitats and species within the Natura 2000 network.”

With respect to its strategic location with access to the M11/N11 which connects it to Dublin (<90km), Wexford Town (52km) and Rosslare Europort (68km), the RSES identifies Gorey as a large-scale “Key Town” playing a significant sub-regional role in strengthening the urban structure of the Region. Based on capacity analysis (including historic growth levels), it is envisaged that local authorities will also plan for significant growth in these Key Towns. The proposed development in Gorey will provide for a sustainable residential development on appropriately zoned lands, in an accessible location within the development boundary of Gorey which promotes a balanced mix of residential development and public amenity.

It is submitted that the provision of a high quality and medium density residential development consisting of 421 no. residential units (133 no. houses, 228 no. apartments, and 60 no. duplex units) with 2 no. community rooms and 2 no. retail units, a large parkland and 1 no. childcare facility will assist in achieving the aforementioned objectives and it also complies with the pertaining policies and standards.

For further details on how the proposed development is in accordance with these policies, please refer to the Housing Quality Assessment (HQA) and the Architectural Statement prepared by Connolly Architects which is included as part of the architectural planning packs.



Figure 3-1. Application Site Location within Gorey Key Town area under the RSES (Southern Regional Assembly)

In relation to Settlement Strategies, Regional Policy Objectives (RPO) 25-f and 25-g of the RSES set out the rationale and basis for preparing these strategies. RPO 25 states:

“Regional Policy Objective (RPO) 25-f - To support the delivery of the infrastructural (including education, amenity, social and cultural) requirements identified for Gorey to keep pace with population growth.”

“Regional Policy Objective (RPO) 25-g - To support the delivery of the infrastructural requirements identified for Gorey subject to the outcome of the planning process and environmental assessments.”

The proposed scheme in Gorey will also contribute to the delivery of the infrastructural requirements of Gorey growth. This includes developing an interlinked development connected to its context by a new vehicular access route to Carnew Road, and new vehicular accesses to Kilnahue Lane, all facilitating access to the town centre. The proposed large parkland to the north-western section of the lands is also a notable element of the scheme serving both the proposed development and its wider area, further supporting the infrastructural development of the town. It is submitted that the proposed development on appropriately zoned lands will adhere with the policies and objectives of the Regional Spatial and Economic Strategy for the Southern Regional Assembly area and will contribute to providing additional housing units within the region.

3.4.2 Regional Transport Strategy of RSES for the Southern Region

The Regional Transport Strategy section of the RSES addresses the role of transport networks to improve the sustainable movement of people and goods. Objectives in this section address the NPF’s National Strategic Outcomes of Enhanced Regional Accessibility, Sustainable Mobility and High-

Quality International Connectivity. Transport investment in the Region aims to meet the following objectives:

- *To reduce the environmental impact of travel on the Region;*
- *To provide for the integrated development of sustainable transport infrastructure, including walking, cycling (including emerging e-modes) and public transport to accommodate the necessary switch from the private car, for the travel needs of all individuals in the Region, in line with the stated government transport policy;*
- *To manage sustainably the existing and future demand for travel, in particular by private car and other passive travel modes, primarily through appropriate integrated land use planning to reduce the distance between origin and destination of the greatest proportion of trips generated;*
- *To support improved strategic and local connectivity;*
- *To expand attractive public transport and other alternatives to car transport;*
- *To reduce congestion;*
- *To cater for the demands of longer-term population and employment growth, in a sustainable manner;*
- *To provide reliable and resilient connectivity to international and domestic markets;*
- *To provide for the safe and most efficient movement of people and goods; and,*
- *To ensure value for money.*

Also, a few of the relevant principles to inform the integration of land use and transport planning in the Region over the period of the RSES is:

- *Supporting compact and smart growth through the achievement of mutual consistency between land use and transport planning, investment, and service provision;*
- *Developing a comprehensive network of safe cycling routes in the three cities and their metropolitan areas and to provide similar facilities in other towns and villages where appropriate; and,*
- *Ensuring that future developments are planned and designed to maximise their accessibility by public transport, walking and cycling.*

Outlined in the RSES and in relation to integration of land use and transport, RPO 151(d) states:

***“Regional Policy Objective (RPO) 151-d** New employment and residential development will be consolidated and intensified in a manner which renders it serviceable by public transport and ensures that it is highly accessible, by walking, cycling and public transport. Within the Metropolitan Areas of Cork, Limerick-Shannon and Waterford, except in limited planned circumstances, trip intensive developments or significant levels of development will not occur in locations which are not well served by existing or proposed high capacity public transport”*

Also, RPO 152 sets out local planning objectives, of which the most relevant to the proposed scheme are as the following:

***“Regional Policy Objective (RPO) 152** It is an objective to:*

New development areas will be permeable for walking and cycling and the retrospective implementation of walking and cycling facilities shall be undertaken where practicable in existing neighbourhoods, to a give competitive advantage to these modes; and,

Where possible, developments will provide for filtered permeability. This will provide for walking, cycling, public transport and private vehicle access but at the same time will restrict or discourage private car through trips.”

In this instance, the proposed SHD development will provide for full pedestrian and cycle links to the local area network, and these will provide safe access to the nearby primary and secondary schools which will serve the residents. The internal road network links the R725 Carnew Road to Kilnahue Lane and provides well planned and safe vehicular access and connectivity within the development. There is a clear hierarchy of vehicular routes with appropriate safety and identity by means of traffic calming measures and use of varied surfaces. Therefore, it is considered that the proposed development is consistent with the objectives of the Regional Transport Strategy of the RSES.

3.5 LOCAL PLANNING POLICY

This section of the report provides an account of the relevant local planning policy framework pertaining to the application site and proposed development, all of which is contained within the Wexford County Development Plan 2013-2019 (as extended), the Gorey Town and Environs Local Area Plan 2017-2023 and the Creagh Neighbourhood Framework contained therein.

It is submitted that the draft Development Plan has recently been published, and that it will be adopted in due course. Therefore, the Draft Development Plan has also been explored under a separate sub-section, however the Draft Development Plan does not propose changes in the context of the proposed development.

3.5.1 Wexford County Development Plan 2013-2019

3.5.1.1 Overarching Considerations

The subject site is located within the functional area of Wexford County Council. The development of the site is therefore informed by the policies and objectives of the Wexford County Development Plan. The policies and objectives of the adopted Development Plan are underpinned by the following:

- *“A sustainable spatial development strategy to guide the location of development;*
- *Clear guidance on the future use of land and the pattern of development over the next six years;*
- *A framework for the future investment in physical and social infrastructure;*
- *A framework for developing the county’s economy;*
- *Management and control by indicating standards to be achieved in new developments;*
- *Ways to conserve and enhance the urban and rural environment and to protect the diversity of the natural and cultural landscape;*
- *Guidance for public and private investors in relation to land use and development; and,*
- *A framework for developing tourism in the county.”*

3.5.1.2 Core Strategy

The purpose of the Core Strategy is to articulate a medium-to-longer term quantitatively based strategy for the spatial development of the area of the Planning Authority and in doing so, to demonstrate that a Development Plan and its policies and objectives are entirely consistent with national and regional policies and strategies.

Gorey has been identified as a Larger Town in the Development Plan. The County Development Plan notes that Gorey has a good location for economic development, supporting the northern part of the County along Enniscorthy. The Development Plan confirms a considerable population increase across the County, in particular around the wider Enniscorthy and Gorey areas. In conjunction with the SERPGs and to achieve the strategic aims of the Core Strategy, the Development Plan considers an aggregate of 40% of the County's population growth over 2011-2022 to be allocated to the three larger towns of Enniscorthy, New Ross, and Gorey. Outlined in the Development Plan and with regards to the SERPGs, Enniscorthy and Gorey have recently experienced high levels of population growth and that they will continue to be attractive locations for new residential development. However, it is cautioned that care must be taken to ensure the continued expansion of these urban areas is regulated to ensure that community, social and retail developments keep pace with recent rapid phases of mainly residential development.

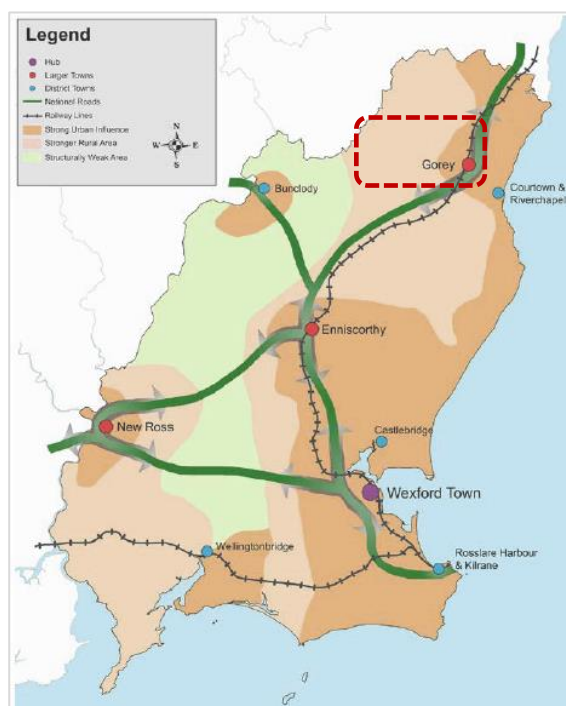


Figure 3-2. Gorey within the Core Strategy Map (extracted from the Development Plan)

Set out in the Development Plan, *“the designated roles of Larger Towns are either:*

(a) target for growth, or

(b) more measured growth in a manner that allows community, social and retail development to catch up with recent rapid phases of mainly residential developments.”

According to the Development Plan, *“the development approach for Gorey Town is to accommodate more measured growth in the town, consolidating the existing pattern of development. The focus will be on encouraging and facilitating the further development of physical and social infrastructure for the town.”*

	Core Strategy Population Allocation ¹	Housing Requirement (Ha) ²	Housing Yield (Units) ³	Existing Zoning (Ha) ⁴	Housing Yields (Units) ⁵	Shortfall/ Excess (Ha) ⁶
County (Total)	15,754	787.49	9,344.1	1,118	22,360	+330.51
Wexford Town	5,028	180.68	2,409.11	398	7,960	+217.32
Larger Towns						
Enniscorthy	2,101	92.75	1,060.04	379	7,580	+286.25
New Ross	2,101	87.12	995.75	39	780	-48.12 ⁷
Gorey	2,101	89.46	1,022.48	121	2,420	+31.54
District Towns						
Bunclody	251	11.61	132.63	75.5	1,510	+63.89
Castlebridge	134	7.91	90.16	NA	NA	NA
Rosslare Harbour and Kilrane	244	11.55	131.9	11.8	236	+0.25
Courtown	355	20.95	238.78	NA	NA	NA
Wellingtonbridge	88	3.44	39.28	NA	NA	NA
Strong Villages, Smaller Villages and Rural Areas	3,351	282.02	3,223.97	93.7	1,874	-188.32 ⁸

Figure 3-3. Gorey within the Core Strategy Population Allocation and Housing Land over 2013-2019 (extracted from the Development Plan)

Objective SS05 of the Development Plan seeks:

“To encourage new residential developments to occur in the Hub, Larger Towns and District Towns in accordance with the Core Strategy and Settlement Strategy and subject to adequate capacity being available in the relevant wastewater treatment facilities in the interests of protecting water resources in the area.”

Objective SS14 of the Development Plan seeks:

“To encourage new residential development to occur in the Larger Towns in accordance with the Core Strategy and Settlement Strategy and subject to compliance with normal planning and environmental criteria including the availability of adequate waste-water treatment capacity and drinking water capacity and the development management standards contained in Chapter 18.”

Objective SS15 of the Development Plan seeks:

“Ensure the zoning of lands for residential use in the Larger Towns is in accordance with the Core Strategy and Settlement Strategy. The development of this zoned land is subject to adequate capacity being available in the relevant wastewater treatment facilities in the interests of the protecting water resources in the area and subject to compliance with normal planning and environmental criteria and the development management standards contained in Chapter 18.”

It is submitted that the proposed development will provide for a high-quality residential development on Tiered 1 Serviced Lands within the existing development boundary of Gorey Town, which complies with the objectives of the Development Plan to encourage sustainable residential development. The provision of 421 no. residential units will seek to ensure the objectives for Gorey as a Larger Town are

achieved and efficiently contribute to the Core Strategy housing supply target set out in Wexford County Development Plan 2013-2019.

3.5.2 Gorey Town and Environs Local Area Plan 2017-2023

3.5.2.1 Overarching Considerations

The Gorey Town and Environs Local Area Plan 2017-2023 sets out the strategies and objectives for the future development of the area. The LAP is informed by the policies and objectives of the Wexford County Development Plan 2013-2019, in particular where it is to adhere to the objectives and development management standards set out therein. The vision for Gorey Town under the Local Area Plan is to achieve the following:

“By 2023 Gorey Town will be a high quality, green, well connected town with a compact, walkable urban form. It will have a network of sustainable neighbourhoods that are socially inclusive and desirable places to live. Gorey Town will have high quality sustainable jobs and it will be an attractive place to live in, to visit and to enjoy its high-quality public realm, its vibrant arts and culture and its bustling town centre and premier retailing services.”

The key principles for achieving the vision of the Local Area Plan are underpinned by the following considerations:

- *“Require high quality and people friendly design.*
- *Continue to develop Gorey as a thriving and attractive town with a vibrant mix of uses.*
- *Continue to develop the town as a premier retail destination.*
- *Continue to improve the public realm so that the town is an attractive place to live, work and visit.*
- *Prioritise local economic and employment development.*
- *Continue to ensure that adequate provision is made for childcare, educational and recreational facilities.*
- *Improve the movement, connectivity and legibility within the plan area for users of all forms of transport, in particular pedestrians and cyclists.*
- *Require high quality accessible public open spaces and continue to provide a network of public open spaces at appropriate locations in the plan area.*
- *Protect natural, built and cultural heritage*
- *Maximise the benefits of biodiversity and enhance the green infrastructure network in the area.”*

3.5.2.2 Land Use Zoning

Under the current Gorey Town and Environs Local Area Plan, the majority of the lands are zoned as “R - Residential” zoning objective, however, a portion of the lands located along the north-eastern boundary of the site is zoned as “OS - Open Space & Amenity” zoning objective. Outlined in the LAP, these zoning objectives seek the following:

“R - Residential Zoning Objective: To protect and enhance the residential amenity of existing and developed communities and to provide for new residential development, associated residential services and community facilities.

OS - Open Space & Amenity Zoning Objective: To protect and provide for recreation, open space and amenity areas.”

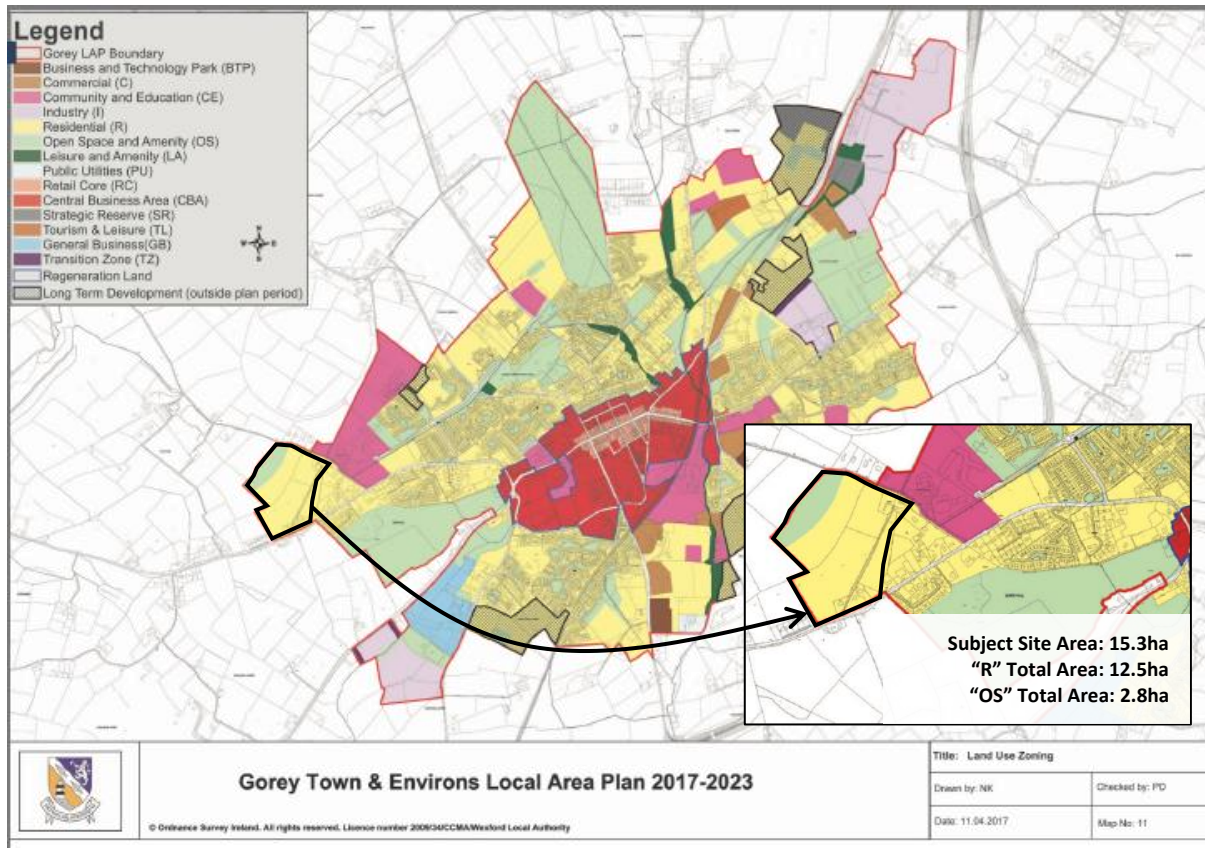


Figure 3-4. Land Use Zoning Map Extracted from the County Development Plan (application site outlined in black)

Outlined in the LAP, the primary purpose of “R - Residential” zoning objective is “to provide for new residential development and associated uses. While housing is the primary use in this zone, recreation, education, childcare facilities, community buildings, sheltered housing and local services will also be considered subject to the preservation of neighbouring residential amenity”.

In relation to “OS - Open Space & Amenity”, primary purpose of this objective is “To retain and protect all existing open spaces, both passive and active”.

Set out under the “Land Use Zoning Matrix” provided in the adopted LAP, the proposed development comprising of 421 no. residential units, 1 no. childcare, as well as a multi-purpose building comprising of 2 no. community units with 2 no. retail units, and a large parkland with a number of pocket parks is permitted in principle under Zoning Objectives “R” and “OS”, and is therefore in accordance with the zoning objectives and the necessary social and physical infrastructure for the area.

3.5.2.3 Housing & Social Infrastructure Delivery

In conjunction with the adopted Development Plan, developing sustainable communities lies at the heart of the LAP and this is echoed in the vision for the plan area. While the main purpose of the LAP is to plan for the future growth and development of the plan area and to set out the objectives which will guide and regulate this development, it focuses on identifying and meeting the needs of the local community.

The Core Strategy of the Wexford County Development Plan 2013-2019 projects a population increase of 2,769 people for Gorey by 2022, which would indicate 30% increase since 2011. A similar population allocation has been applied for the final year of the LAP until 2023. This results in a total population allocation of 2,991 persons between the years 2011 and 2023. The Core Strategy population allocation equates to an additional 1,372 residential units². The LAP states that between April 2011 and the end of 2015, it is estimated that 50³ residential units were constructed in the plan area which reduces the required figure to 1,320 units.

Following on from the housing demand figures outlined above, the LAP states that the number of units would require a total of 99 hectares of residential zoned land, including the 50% headroom to allow for market choice. The LAP states that there are approximately 101 hectares of 'Residential' zoned lands for development during the lifetime of the Local Area Plan with a further 34 hectares reserved for future development beyond the period of the LAP.

Objective H01 of the LAP seeks:

"To ensure that all new residential developments in the plan area provide a high quality accessible living environment with attractive and efficient dwellings located in a high quality public realm and served by well-designed and located open spaces."

The proposed development consisting of 421 no. high quality designed mix of residential units on a development site totalling 19.17 hectares in area (including the off-site upgrade works), where associated complementary land-uses such as a childcare facility and retail and community spaces is to be provided will represent a sustainable development at an appropriate location that will facilitate in the sequential development of Gorey Town where it will provide additional housing units to meet the requirements of the targeted increase in population as indicated under the provisions of the Regional Spatial & Economic Strategy for the Southern Region 2019-2031, Wexford County Development Plan 2013-2019 and the Gorey Town and Environs Local Area Plan 2017-2023. For further information, please refer to the Housing Quality Assessment and Architectural Statement prepared by Connolly Architects.

² An average household size of 2.7 is used up to 2015. An average household size of 2.55 is used for 2017-2023.

³ This figure is based on commencement notices received by the Planning Authority during this time.

Objective H02 of the LAP seeks:

“To provide social housing and housing supports in accordance with the Social Housing Assessment of Needs.”

The Council will continue to implement the Housing Strategy (Volume 6 of the CDP) and to use Part V to assist with the delivery of social housing in the plan area. It is considered that the proposed development is consistent with the Housing Strategy of the adopted County Development Plan and the requirements under Part V of the Act, as it is proposed to provide 20% of the housing units for social and affordable housing in this case.

Objective H03 of the LAP seeks:

“To facilitate new residential development in accordance with the Core Strategy and to require physical, social and community infrastructure to be provided either prior to or in tandem with this new residential development. No dwelling within that residential development shall be occupied until the required infrastructure has been provided. The required infrastructure which is identified on Maps 3 and 4 and in Appendix 1 Neighbourhood Framework Plans and Appendix 2 Implementation and Infrastructure Delivery Schedules includes wastewater and water supply, public lighting, footpaths, cycleways, play-ground/play facilities, parks and schools.”

It is submitted that the proposed development at Kilnahue & Gorey Hill is consistent with the above objective. The proposed scheme will ensure an appropriate level of access to community services, and this includes providing for 1 no. childcare facility catering for circa 89 children which is considered to be above the requirements of the relevant planning policy. The proposed development also provides for 2 no. community rooms and 2 no. small retail units, which contributes to the community infrastructure at the local level. The proposed development also will ensure walking and cycling are viable options for the community, with the area also very well served by existing public transport infrastructure (Gorey Railway and the Local Link Wexford 389 bus service located within circa 1.5km of the application site), all of which will ensure that the future population utilise sustainable public transport and active travel options rather than car transport.

Objective H04 of the LAP seeks:

“To require planning applications for residential developments to demonstrate how the scheme complies with the Neighbourhood Framework Plan which the subject lands are located in. It must be demonstrated how the development complies with the layout, form, density, linkages and accessibility and open space provision. Where a deviation from the framework is proposed, the application must demonstrate that this deviation does not compromise the delivery of the Framework and is equally permeable and proposes a positive relationship with adjacent existing and proposed development, including public open spaces and linkages.”

It is submitted that the proposed development is consistent with these policies and objectives of the Neighbourhood Framework Plan.

Objective H05 of the LAP seeks:

“To require residential schemes to provide an appropriate mix of house types that will cater for the various household compositions in the plan area. In general the following house type ratio will be required in residential schemes:

- 25% two bedroom dwellings,
- 30% three bedroom dwellings,
- 30% four bedroom dwellings, and
- 15% to be allocated to any of the above based on evidence of demand.

The Council will consider a deviation from this mix ratio where it is demonstrated that there is an overprovision of a particular type of house type or there is lack of demand for a particular house type(s) in the area.”

The proposed development provides for a total of 421 no. residential units and offers a variety of unit mix in terms of size and type. The proposed mix of units including two- and three-bedroom dwellings are compliance with the policies of objectives of the LAP, however, the proposed no. of four-bedroom units is below requirements of the adopted LAP, and therefore, the proposed development materially contravenes objective H05 of the LAP. However, the adherence of the foregoing Objective H05 of the Gorey Town & Environs LAP to an absolute dwelling mix ratio is suggested to contradict the flexible approach of the Development Plan, National and Regional planning policy to cater for existing and changing population requirements in a given context. In this instance, an average household size of 2.3 recorded for Gorey Town, and an existing and emerging need for smaller household sizes, is acknowledged in the National and Regional planning policy. For further information in this regard, please refer to the enclosed Material Contravention Statement enclosed prepared by Downey and submitted as part of this application.

Objective H06 of the LAP seeks:

“To ensure that the phased development of a residential scheme delivers the quantum of public open space commensurate to the number of dwellings in that particular phase. Planning applications for residential schemes of 25 or more dwellings shall be accompanied by a detailed phasing schedule detailing the number of dwellings, amount of public open space and infrastructure which will be developed as part of each phase.”

It is submitted that the proposed development will be constructed in four phases. Please refer to the enclosed Phasing Schedule prepared by Connolly Architects as part of the Architectural Statement, and also refer to the landscape drawings and Landscape Rationale Report prepared by RMDA Landscape Architects + Consultants for further information in this regard.

3.5.3 Creagh Neighbourhood Framework Plan

Gorey Town and Environs Local Area Plan 2017-2023 provides for a *Town Centre Framework Plan* and number of *Neighbourhood Plans*, including the “Creagh Neighbourhood Framework Plan”. As shown in the Figure below, the Creagh NFP area includes a combination of developed and undeveloped lands immediately north/north-west of the town centre, extending from Kilnahue townland at the R725 (Carlow Road) to Ramsfortpark Forest to the east. This also includes the application lands.

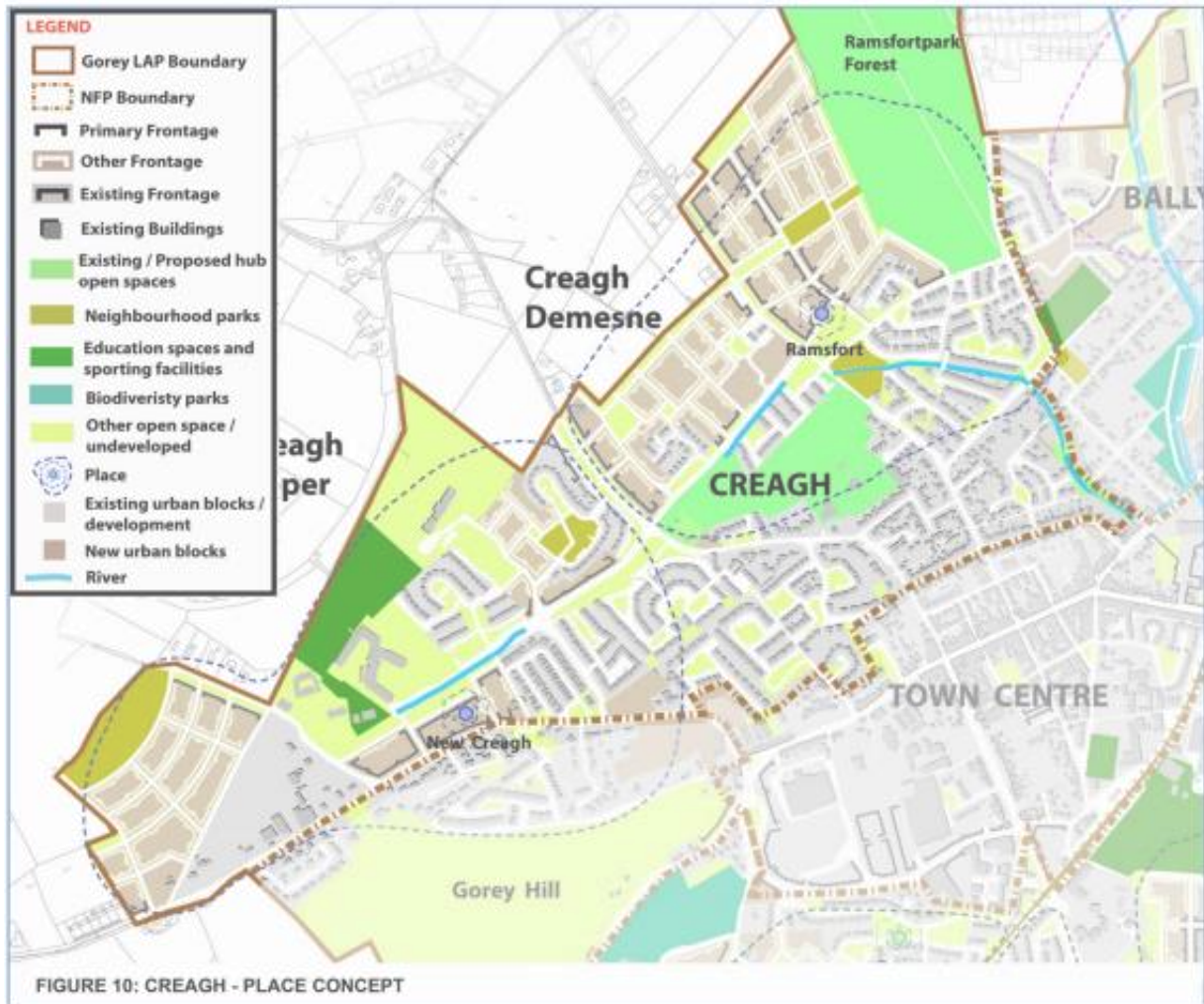


Figure 3-5. Creagh Place Concept extracted from the LAP

The Framework Plan makes provision for Key Infrastructure such as the new avenue, main roads and streets and new local community spaces (this typically lies within the range of 15 and 25% of the total parcel area). Set out under the NFP, all Local Area Plan and County Development Plan development management standards around layout, open space, car parking and local infrastructure and services will need to be satisfied in new proposals.

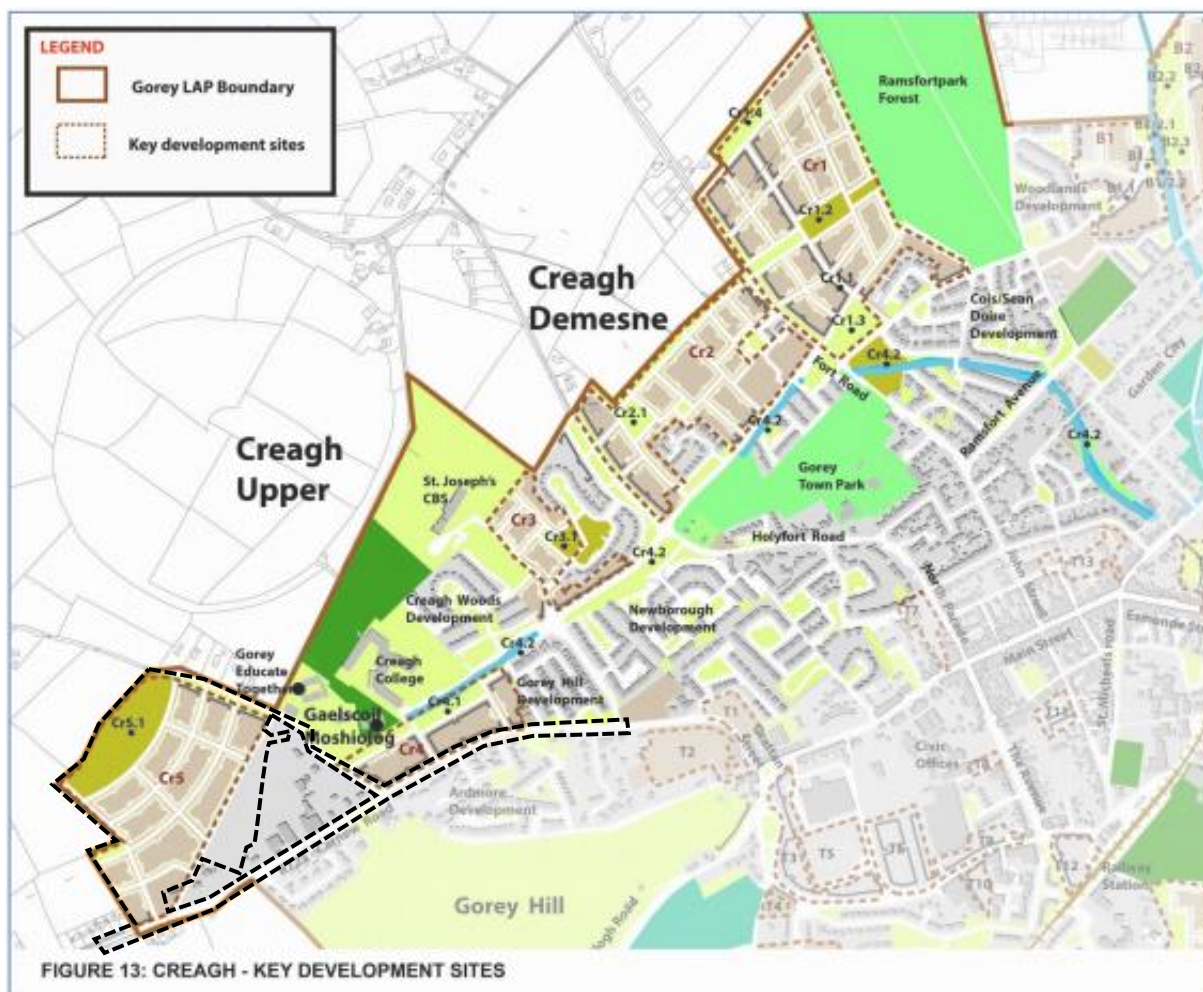


Figure 3-6. Key Infrastructure Map extracted from the LAP

As illustrated on the Figure 3- above, one of the provisioned key development sites within the NFP is located within the application site. Accordingly, the “Cr5” is to provide for “Open Space” and as per, “Cr5.1: Open Space” is a 2.8 ha site provisioned for “new local open space incorporating SUDS”. It is noted that the “Cr5.1” site is located on a section of the application site which is zoned as “OS - Open Space” along the western boundary of the subject site.

It is submitted that the proposed development is informed by the key objectives and components of the Creagh Neighbourhood Framework Plan, and adherence to the 12 criteria set out in Sustainable Development in Urban Areas.

For further information on this, please refer to the Architectural Statement prepared by Connolly Architects and Landscape Rationale Report prepared by RMDA Landscape Architects + Consultants. These reports also outline site analysis, design rationale, landscape rationale, and compliance with the 12 Urban Design Criteria guidance (2008 Manual).

3.5.4 Draft Wexford County Development Plan 2021-2027

Under Section 20 of the Planning and Development Act 2000 (as amended), Wexford County Council being the Planning Authority for the area had given notice that they have prepared a Draft County Development Plan for Wexford. The Draft Wexford County Development Plan (2021-2027) comprises

a written statement and maps and is accompanied by an Environmental Report on the likely significant effects on the environment of implementing the Draft Plan, prepared by the Planning Authority in accordance with the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (as amended). A Natura Impact Report pursuant to Part XAB of the Planning and Development Act 2000 (as amended) and in accordance with Article 6 of the Habitats Directive was also prepared.

The Draft Wexford County Development Plan (2021-2027) was available for public display from Monday, 28th September 2020 to Wednesday, 9th December 2020. It is noted that Wexford County Council proposed to advance a new Development Plan at the earliest possible date. At the time of preparing this SHD application, the Draft Development Plan has not been formally ratified by the Elected Members. Until such time as this new Development Plan is prepared and adopted, the current Wexford County Development Plan 2013-2019 (as extended) will continue to have effect. It is however submitted that the proposed development is consistent with the policies and objectives of the Draft Plan.

3.6 Site Specific Objectives

The Statement of Consistency with Planning Policy submitted with the application indicates how the proposed development is consistent with the relevant site-specific objectives pertaining to the lands. Where there is any deviation from these objectives, this is justified in the Material Contravention Statement.

3.7 Planning History Context

Downey have carried out an examination of the planning history of the subject site which determined that there have been a number of planning applications made on the subject lands. The most relevant planning history is as follows:

- **Reg. Ref. 20160623 (ABP Ref. PL26.248159)** - By order dated 20th February 2017, Wexford County Council granted permission to Gerard Gannon Properties for a residential development consisting of: 219 no. dwelling units (10 no. 2-bedroom semi-detached units, 64 no. 3-bedroom semi-detached units, 20 no. 3-bedroom detached units, 90 no. 4-bedroom semi-detached units, and 35 no. 4-bedroom detached units), a creche building c. 523 sqm and associated play areas, a new vehicular access/exit onto R725 Carnew Road, the upgrade and improvement of a portion of the existing Kilnahue Lane including the provision of 2 no. vehicular access/exits, together with a playground area, a new connection to existing foul and storm water services, underground attenuation tanks, the removal of an existing dilapidated structure and all associated site works on a site of 15.3 hectares (37.8 acres). Subsequently, an appeal was lodged on 14th March 2017 and a decision to refuse permission was made by An Bord Pleanála on 17th July 2017.
- **Reg. Ref. 20140557** - By order dated 3rd November 2014, Wexford County Council refused permission to Gerard Gannon Properties for a residential development consisting of: 206 dwelling units, creche, 1 no. vehicular access/exit onto R725 and upgrading/improvement of Kilnahue Lane including provision of 2 no. vehicular access exits. The development will consist of 1 no. creche c. 523 sqm, 56 no. 3-bed two-storey semi-detached units, 80 no. 4-bedroom semi-detached units,

together with a new connection to existing foul and storm water services, underground attenuation tanks and all associated site works on a site of 15.3 hectares (37.8 acres).

- **Reg. Ref. 20073736 (ABP Ref. PL26.227346)** - By order dated 10th December 2007, Wexford County Council refused permission to Gerard Gannon Properties for a residential development consisting of: 247 dwelling units, retail units, and creche / community building, 1 no. vehicular access/exit onto R725 Carnew Road and upgrading/improvement of Kilnahue Lane including provision of 2 no. vehicular access/exists. The development will consist of 2 no. type retail units of c. 120 sqm each, 1 no. creche/community building c. 1,150 sqm, 8 no. type C 3-bed two-storey semi-detached units, 14 no. type C1 3-bed two-storey end of terrace units, 14 no. type D 2-bed two-storey terrace units, 12 no. type E 4-bed three-storey detached units, 12 no. type F 3/4-bed three-storey split level semi-detached units, 2 no. type G 1-bed apartment units, 2 no. type G1 3-bed apartment units, 12 no. type H 3-bed two-storey terrace units, 2 no. type I 1-bed apartment units, 4 no. type J 1-bed apartment units, 6 no. type K 4-bed terrace units, 1 no. type L 2-bed apartment units, together with all associated site works on a site of 15.3 hectares (37.8 acres).

4.0 POPULATION AND HUMAN HEALTH

4.1 Introduction

This section of the Environmental Impact Assessment Report assesses the impact of the proposed development on the population, human health, and human environment in the general area of the proposed project on lands at Kilnahue & Gorey Hill, Carnew Road & Kilnahue Lane, Gorey, County Wexford. Specific aspects that will be examined include population levels, human health, residential amenity, impact on employment, commercial activity, land-use, community infrastructure and social facilities. Insofar as possible, this assessment has also considered impacts on the future residents, workers, and visitors to the subject lands.

4.2 Research Methodology

The following assessment of the predicted impacts on population and human health was undertaken based on local population information from the Central Statistics Office's Census of Population reports and databank, the Regional Spatial and Economic Strategy 2019-2031, the Wexford County Council Development Plan 2013-2019, the Gorey & Environs Local Area Plan 2017-2023, and the Creagh Neighbourhood Framework contained therein (Appendix 1 of the LAP). It is important to note that given the location of the subject site situated within the Gorey Rural ED and appearing as an extension to the Gorey Urban ED, the catchment area for demographic investigation of this study was defined as the Gorey Urban and Rural ED's.

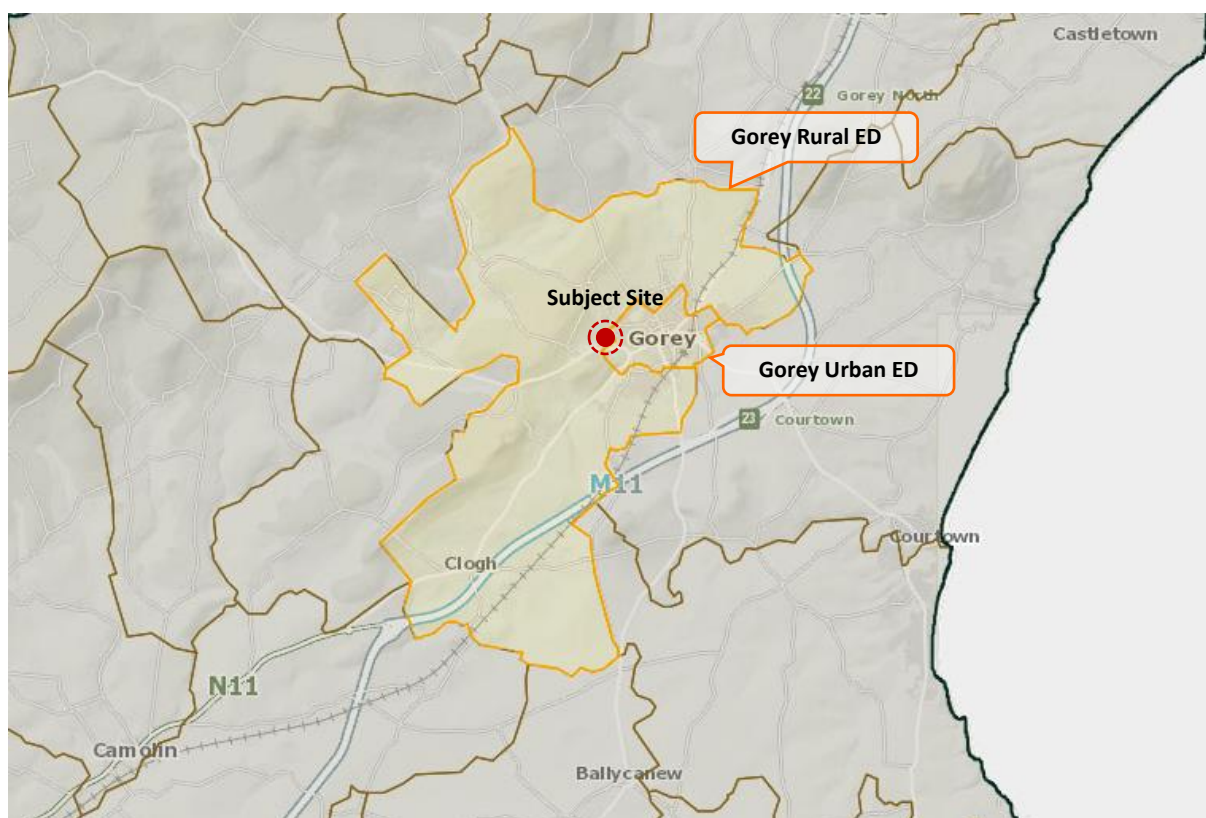


Figure 4-1. Spatial Scope of Demographic Studies (subject site location marked with red)

However, given the nature and scale of the proposed development, it was reasonably considered that in terms of assessing the amenities capable of catering the proposed development, that the area

within approximately 2km radius of the subject site to be assessed. This approach was also taken with the Community and Social Infrastructure Audit, School Provision Assessment, and Childcare Provisions Assessment, and as such provides for greater consistency between these reports and the following EIAR.

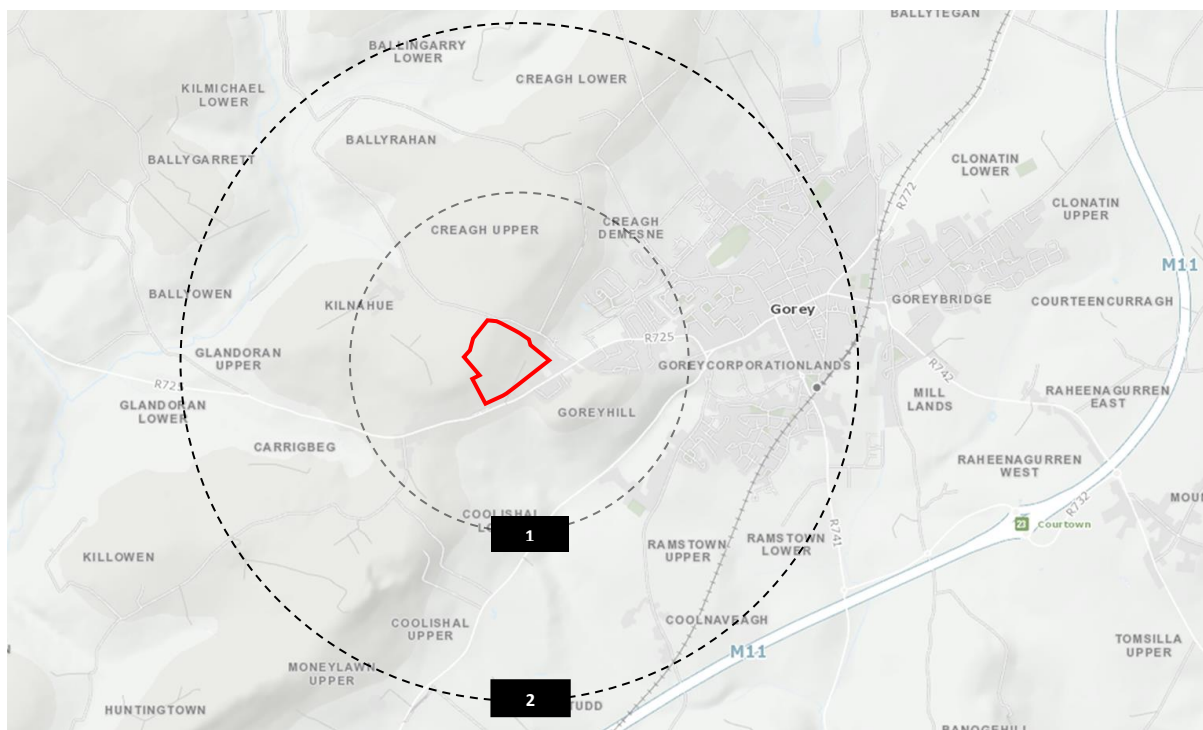


Figure 4-2. Spatial Scope of Community and Social Infrastructure Audit (approximate boundaries of the subject site outlined in red)

A site visit and a Community and Social Infrastructure Audit was also undertaken to appraise the location, the existing infrastructure and services in the area and any likely and significant potential impact upon human receptors. This also accompanies a School Demand Assessment and a Childcare Provision Assessment to further investigate the future demand for these facilities with respect to the flux of population arising from the proposed scheme. The employment context was set out drawing principally on the most recently available statistics for the total number of persons at work, unemployment levels and employment categorised according to social group. Therefore, information on the economic performance of the area and the wider region is derived primarily from the 2016 Census results and statistics obtained from the ESRI. The following assessment of land-use was undertaken based on a site visit appraisal and a review of the zoning objectives from the Wexford County Development Plan 2013-2019. The assessment was also carried out in accordance with the following guidance documents and aligned accordingly based on Downey's professional experience and judgement.

- EPA (2017), Guidelines on the Information to be Contained in Environmental Impact Statements.
- EPA (2015), Advice Notes on Current Practice in the Preparation of Environmental Impact Statements.

4.3 Baseline Environment

The subject site is located on the south-west of Gorey Town Centre between the Kilnahue Lane and Carnew Road (R725). The site lies within open undulating fields and is bounded to the south by the regional road R725 and some residential development, to the east by pasture fields behind residential and commercial development, to the north and northeast by a local road linking Ballyrahan and Gorey town, and to the west by open crop fields and beyond that some modern farmsteads and dwellings. The application site is a greenfield site spreading across irregular shaped fields, and is located to the south-west of Gorey Town Centre between Kilnahue Lane and Carnew Road (R725).

The surrounding area is characterised by detached dwellings on single plots, as well as smaller-scale residential developments in a variety of designs and layouts, particularly along Carnew Road, the R725. The site slopes from west to east, towards the town and from north to south. The site's boundaries comprise of native hedgerows with a number of trees interspersed throughout. Residential development in the immediate vicinity generally consists of detached dwellings. Kilnahue Lane is a local access road serving a number of detached houses, two primary schools and a motor service unit. It has a footpath and a cycle path along its northern side for approximately 300m from the junction with Carnew Road which provide access to the schools. Carnew Road is a recently upgraded regional road. From the junction with Kilnahue lane it has a footpath, cycle path and layby parking for the first 80m of its northern edge. Beyond this a footpath continues on its southern edge. A 50 kph speed limit applies in this general area.

4.4 Characteristics of the Proposed Development

The proposed development subject to this Strategic Housing Development application provides for demolition of a dilapidated structure on the lands and construction of 421 no. residential dwellings, comprising of 133 no. houses, 228 no. apartments, and 60 no. duplexes. The proposed development also provides for 1 no. childcare facility, 2 no. community rooms and 2 no. small retail units, and a large parkland and numerous pocket parks across the subject lands, car and cycle parking spaces, and all associated ancillary site development infrastructure works necessary to facilitate the development.

4.5 Demographic Trends

4.5.1 Population

The latest Census results show that Ireland's population stood at 4,761,865 in April 2016, an increase of 173,613 (3.8%) since April 2011. This trend has been represented in the Southern region, which has experienced a population increase of 2.9% in the 2011-2016 period. As illustrated in the Table 4-1 below, the population growth of County Wexford followed the same pattern as the Region, and with a growth rate of 2.9% over the intercensal period increased to 149,722 in 2016. This recorded the County Wexford as the fourth dynamic county in the Region in terms of population change over 2011-2016.

Table 4-1. Population Change Across the Southern Region over 2011-2016

Area	2011	2016	Actual Change	% Change
County Carlow	54,612	56,932	+2,320	4.1
County Clare	117,196	118,817	+1,621	1.4
County Cork	519,032	542,868	+23,836	4.4
County Kerry	145,502	147,707	+2,205	1.5
County Kilkenny	95,419	99,232	+3,813	3.8
County Limerick	191,809	194,899	+3,090	1.6
County Tipperary	158,754	159,553	+799	0.5
County Waterford	113,795	116,176	+2,381	2.0
County Wexford	145,320	149,722	+4,402	2.9

Source: CSO StatBank

The proposed development is located within the Gorey Rural ED, appearing as an extension to the development of the Gorey Urban ED. The Table 4-2 below shows the population change within these Electoral Divisions (ED's) defined as the catchment area of this assessment. In this regard, the "catchment area" refers to the area surrounding the subject lands which bound the lands and may be affected by the proposed development. Coincidentally, the catchment area also refers to the population which will be served by the proposed scheme.

Table 4-2. Population Change in the Catchment Area over 2011-2016

Area	2011	2016	Actual Change	% Change
Gorey Urban ED	3,463	3,570	107	3.0
Gorey Rural ED	6,161	6,876	715	10.4
Total	9,624	10,446	822	13

Source: CSO StatBank

4.5.2 Average Household Size

With an average household size of 2.7, there were 3,782 private households in Gorey Urban & Rural ED's in 2016. As shown in the Table 4-3 below, nearly 70% of the households residing in this area in 2016 were small sized households ranging from 1- to 3-person households (2,624 households). It is noted that the average household size in the Gorey Urban ED stood at 2.3, while this is recorded as 2.9 for the Gorey Rural ED in 2016.

Table 4-3. Private Households in Gorey Urban & Rural ED's by Household Size, 2016

Size of household	Households	%
1-person Households	917	24.2
2-person Households	1,053	27.8
3-person Households	672	17.8
4-persons Households	678	17.9
5-person and over Households	462	12.2
Total	3,782	-

Source: CSO StatBank

4.5.3 Average Age

CSO 2016 statistics indicate that the average age for the study area has increased slightly since the last census period in 2011. However, while the average age has increased within the study area and it stands above the State average (37.4) for Gorey Urban ED, the majority of the population residing in the catchment area of the study, i.e., Gorey Rural ED, are still below this average.

Table 4-4. Average Age within the Assessment Area

Area	Avg. Age (years)		Avg. Change
	2011	2016	2011-2016
Gorey Urban ED	38.5	39.4	+0.9
Gorey Rural ED	31.2	32.4	+1.2

Source: CSO StatBank

Investigating the age profile of the area as per Census 2016 indicates that younger age cohorts still form the greatest share of the population residing in Gorey Urban & Rural ED's, however, as shown on the Figure 4-3, this is more notable in the Gorey Rural ED.

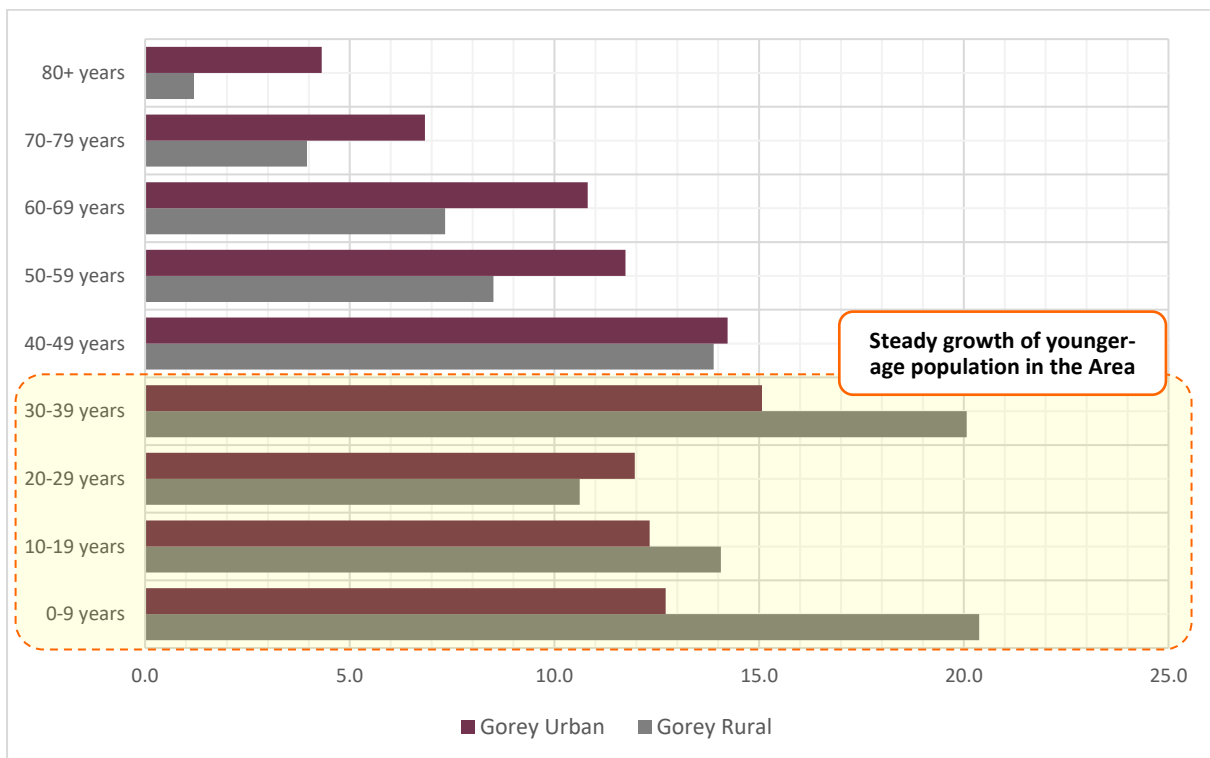


Figure 4-3. Population Age Cohorts in Gorey Urban & Rural ED's, 2016

The population pyramid below (Figure 4-4) shows the town age distribution in more detail. A peak of births in 1980's shows up in the 30-39 age category, and another peak in the number of births occurred in 2000's and shows up in the 0-9 age category. Overall, the age pyramid indicates a young population residing in the town, which is expected to grow in the coming years.

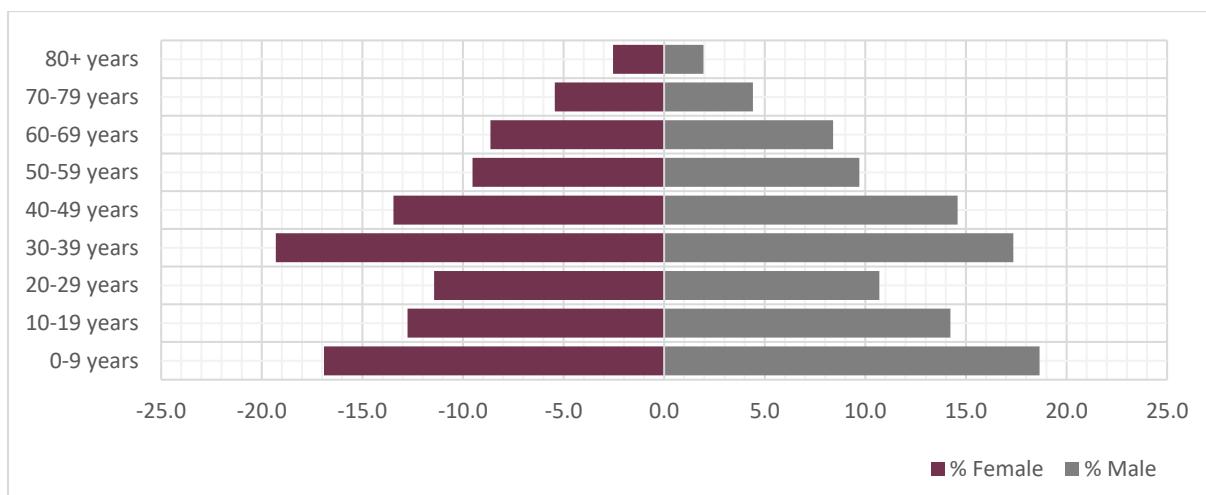


Figure 4-4. Population Age Pyramid of Gorey Urban & Rural ED's, 2016

The factors outlined above have a knock-on implication on the provision of housing and its associated required facilities to cater for this increase in population within the local area. The factors above would indicate that with a relatively small household size and an average age in the house-buying age, that there would be a need for the proposed development within this area.

4.5.4 Potential Impact of the Proposed Development

4.5.4.1 Construction Phase

The construction phase of the proposed development should not have any direct impact on the population of the area or the subject lands. It is expected that the work force will generally travel to the development site rather than take up residence in the immediate vicinity. However, the construction of any project has potential to give rise to an impact on health and safety of human beings if construction activities are not managed appropriately. Measures to address such health and safety considerations will be addressed in the Construction Management Plan for the development for implementation during the construction phase, in accordance with best practice.

4.5.4.2 Operational Phase

The operational phase of the proposed development will result in the provision of 421 no. new residential units. The average household size in Wexford is currently 2.7 persons, which is based on the 2016 census of population and for the development's catchment area it is also 2.7 persons. Based on this figure, it is anticipated that the proposed development to accommodate a maximum of 1,137 persons. It is noted that within the proposed mix of unit types, there is also one-bedroom units. Excluding the 1-bedroom units, this leaves a total of 341 no. units that can be deemed to accommodate families. Applying the average household size to 341 units capable of accommodating families would generate 920 total residents in total within these units. Applying a maximum household size of 2 to the one-bedroom apartments would generate 160 total residents in these units. This would provide for an overall of 1,075 persons. Therefore, the proposed scheme is expected to accommodate a maximum of 1,080 to 1,137 persons.

4.5.5 Remedial and Reductive Measures

No remedial or reductive measures are proposed with reference to population.

4.5.6 Predicted Impact of the Proposed Development

4.5.6.1 Construction Phase

The construction phase of the development will have a negligible or neutral impact on population.

4.5.6.2 Operational Phase

The population analysis above suggests that the population of the area will continue to rise in the medium term. The population increase predicted as a result of the operational stage of the proposed development ties in with broader trends in the area and the development will provide for this increase, therefore resulting in a positive impact on population.

4.5.6.3 Monitoring

There is no requirement for population monitoring.

4.6 Employment

CSO 2016 Statistics noted an employment level of 2,006,641 and an unemployment level of 297,396 for the State. The employment level is up by 199,281 since 2011 and the unemployment level is down significantly from the previous figure of 424,843 people, this was mainly due to the impact of the recession on employment levels during the census period. County Wexford as a whole experienced an increase in employment between the period of 2011-2016, although the immediate catchment area of this development saw a decrease in employment as per Census 2016 data seen below (Table 4.5).

Table 4-5. Total Number of Persons aged +15 years at Work in the County and Study Area, 2011-2016

Area	Persons at Work		% Change
	2011	2016	2011-2016
County Wexford	51,307	57,759	11.2
Gorey Urban ED	1,123	1,333	15.8
Gorey Rural ED	2,270	2,635	13.9

Source: CSO StatBank

The Labour Force Survey Q3 2021, which was published by the CSO in November 2021, contains the labour market statistics for Ireland. Due to the impact of COVID-19 in the global economy the CSO has compiled standard methodology and separate COVID-19 adjusted estimates (as stated in their Information Note on Implications of COVID-19 on the Labour Force Survey), which stated:

“As the Central Statistics Office (CSO) is obliged to follow standard definitions and methodology when calculating official estimates from the Labour Force Survey (LFS), it has been decided to compile the Quarter 1 2020 LFS Estimates in the usual way and provide separate COVID-19 Adjusted Estimates. This approach preserves the methodology of the LFS while at the same time providing transparency around the current impact of COVID-19 on the Labour Market within Ireland.

The CSO has produced a supplementary measure of Monthly Unemployment in parallel with the routine Monthly Unemployment Estimate methodology, which incorporates those in receipt of the Pandemic Unemployment Payment into the calculation to produce a COVID-19 Adjusted Measure of Monthly Unemployment. This new measure was published as part of the Monthly Unemployment Estimates (MUE) release for March 2020 and April 2020 and will continue to be made available for as long as deemed necessary by the CSO."

Accordingly, there were 2,471,200 people aged 15-89 years in employment in Q3 2021, giving an employment rate of 72.2% for those aged 15-64, based on the International Labour Organisation (ILO) criteria. The number of persons in employment was up 9.8% (221,200) from 2,250,000 over the year while the employment rate was up from 66.4% in Q3 2020.

The COVID-19 Adjusted Measure of Employment, or the lower bound for the number of employed persons aged 15-89 years, rose from 2,369,731 to 2,393,394 between the end of September 2021 and the end of October 2021. This was accompanied by an increase from 69.1% in September 2021 to 69.8% in October 2021 in the associated COVID-19 Adjusted Employment Rate for those aged 15-64.

Table 4-6. Summary of Labour Force Survey (Q3 2021)

	Standard LFS Methodology (ILO)	COVID-19 Adjusted Estimates September 2021
Indicator	Q3 2021	end of Q3 2021
Employed persons aged 15-89 years	2,471,200	2,369,731
Employment rate for those aged 15-64 years	72.2%	69.1%
Unemployed persons aged 15-74 years	149,100	232,866
Unemployment rate for those aged 15-74 years	5.7%	8.9%
In labour force	2,620,300	-
Not in labour force	1,407,700	-

Source: CSO StatBank

There were 149,100 unemployed persons aged 15-74 years in Q3 2021 based on ILO methodology. In Q3 2021, the unemployment rate was 5.7% for those aged 15-74 years with a rate of 12.1% for those aged 15-24 years, these rates are down from 7.4% and 20.9% respectively in Q3 2020. The COVID-19 Adjusted Measure of Monthly Unemployment published as part of the Monthly Unemployment release for October 2021, was 232,866 for September 2021 (end of Q3 2021), this estimate is an upper bound and adds all those on the Pandemic Unemployment Payment (PUP) to the standard Monthly Unemployment Estimate. Furthermore, the COVID-19 Adjusted Measure of Unemployment fell to 205,246 in October 2021. The associated COVID-19 Adjusted Unemployment Rate fell from 8.9% in September 2021 to 7.9% in October 2021.

4.6.1 Potential Impact of the Proposed Development

4.6.1.1 Construction Phase

The proposed development will provide significant construction sector and related employment over the construction period of the development. It can be difficult to determine the exact numbers that may be employed directly on site during the construction phase as workers may only be employed on a temporary basis as sub-contractors and may also work on other sites during the period. Should An Bord Pleanála grant planning permission for this proposed development, then it will be constructed

over a phased basis, in accordance with the indicative proposed phasing plan for the proposed project and in agreement with the Planning Authority.

Aside from the benefits of direct employment, it is anticipated that builder suppliers and other related services will indirectly benefit from the construction phase of the proposed development. The construction phase will be beneficial to the local economy due to the additional income and expenditure that will arise. This is considered to be a positive impact arising from the development.

4.6.1.2 Operational Phase

The proposed development will attract visitors to the area on a temporary basis, possibly sustaining and increasing the demand for local services, including shops, public houses, restaurants, etc. In addition to the residential component of the development, the application also proposes 1 no. childcare facility, with 2 no. small retail units and 2 no. community rooms, which will deliver new local employment opportunities, both full time and part time positions which will become available, for the resident population, with an overall positive impact on employment.

4.6.2 Remedial and Reductive Measures

No adverse impacts on employment are predicted during the construction or operational phase of the development. No remedial or mitigation measures are considered necessary.

4.6.3 Predicted Impact of the Proposed Development

The predicted impact of the proposed development will be the same as that set out for potential impacts.

4.6.4 Monitoring

There is no requirement for economic monitoring.

4.7 Land-Use

Under the current Gorey Town and Environs Local Area Plan, the majority of the lands are zoned as “R - Residential” zoning objective, however, a portion of the lands located along the north-eastern boundary of the site is zoned as “OS - Open Space & Amenity” zoning objective.

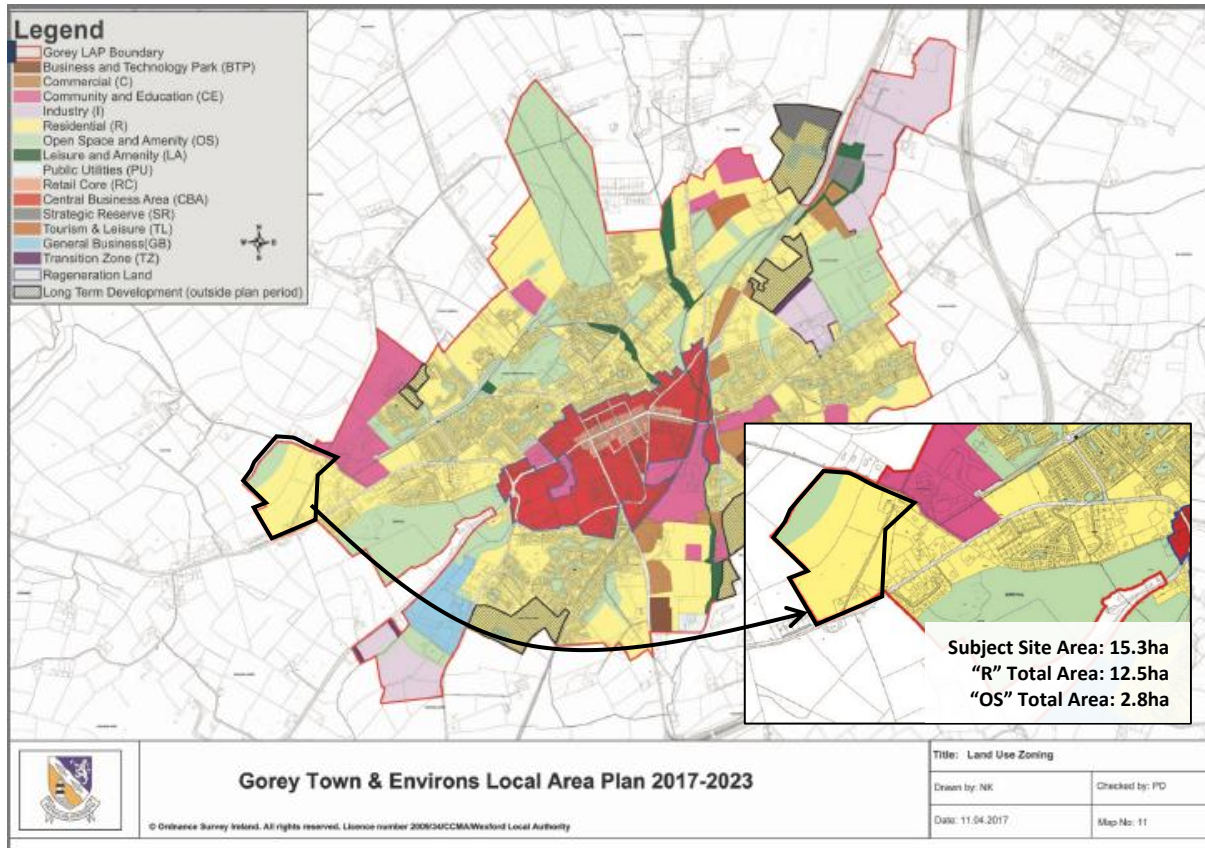


Figure 4-5. Land Use Zoning Map Extracted from the County Development Plan (application site outlined in black)

Outlined in the LAP, these zoning objectives seek the following:

“R - Residential Zoning Objective: *To protect and enhance the residential amenity of existing and developed communities and to provide for new residential development, associated residential services and community facilities.*

OS - Open Space & Amenity Zoning Objective: *To protect and provide for recreation, open space and amenity areas.”*

Outlined in the LAP, the primary purpose of “R - Residential” zoning objective is *“to provide for new residential development and associated uses. While housing is the primary use in this zone, recreation, education, childcare facilities, community buildings, sheltered housing and local services will also be considered subject to the preservation of neighbouring residential amenity”*.

In relation to “OS - Open Space & Amenity”, primary purpose of this objective is *“To retain and protect all existing open spaces, both passive and active”*.

Set out under the “Land Use Zoning Matrix” provided in the adopted LAP, the proposed development comprising of 421 no. residential units, 1 no. childcare, as well as 2 no. community units with 2 no.

retail units, and a large parkland with a number of pocket parks is permitted in principle under Zoning Objectives “R” and “OS”, and is therefore in accordance with the zoning objectives and the necessary social and physical infrastructure for the area. The surrounding area is characterised by detached dwellings on single plots, as well as smaller-scale residential developments in a variety of designs and layouts, particularly along Carnew Road, the R725. Residential development in the immediate vicinity generally consists of detached dwellings. Kilnahue Lane is a local access road serving a number of detached houses, two primary schools and a motor service unit. The proposed new buildings will provide new services for Gorey town, most notably the provision of residential, childcare, and the neighbourhood parkland. The subject lands are serviced by sufficient road capacity to accommodate the new community, which is in keeping with the land use zoning objective. Moreover, the large parkland reinforced by the proposed network of green spaces throughout the scheme would promote the existing green infrastructure and biodiversity of the area, providing for residential amenity and recreation of the prospect residents and the wider community residing in the area. This is submitted to be in line with the land use zoning objective as well. Therefore, it is submitted that the proposed development would be appropriate for its context, ensuring there is sufficient population to sustain community and social infrastructure in the area.

4.7.1 Potential Impact of the Proposed Development

4.7.1.1 Construction Phase

The construction phase of the development involves a change in land-use of the site from a current agricultural greenfield site, which has no current activity other than agriculture, to use as a temporary active construction site. The site is considered suitable for construction activities to provide a development that will cater for a portion of Gorey’s planned population growth through the provision of new homes.

With recommended construction mitigation measures in place as set out within this EIAR, the subject lands and surrounding area have the capacity to accommodate the construction of the proposed development without any significant risk of impact upon existing land-uses.

4.7.1.2 Operational Phase

The proposed development will result in a permanent change in land-use of the site from a current greenfield site to a mix residential development, large-scale green space, and supporting community uses (comprising childcare facility, 2 no. community rooms and 2 no. small retail units). The total proposed net development area comprises c. 11.15 hectares. This is considered to be a permanent positive impact on an area of land that has no current active use. The surrounding land-uses (primarily residential, recreation and commercial uses) will continue during the operational phase of the proposed development. The impact of the proposed site is negligible as the site will have a positive impact on the surrounding area through the provision of a new resident community.

Therefore, while the proposed development will result in a permanent change in land-use from an undeveloped land to a mix of residential and complementary uses, this change is consistent with the zoning objectives for the lands as per the Wexford County Council Development Plan 2013-2019 and Gorey Town & Environs Local Area Plan 2017-2023.

4.7.2 Remedial and Reductive Measures

No remedial or reductive measures are proposed with reference to land-use.

4.7.3 Predicted Impact of the Proposed Development

4.7.3.1 Construction Phase

The predicted impacts of the construction phase of the development are the same as that set out under the potential impacts of the construction phase of the development and are not anticipated to be significant. Furthermore, all impacts will be temporary in nature.

4.7.3.2 Operational Phase

The predicted impact is the same as that set out under the potential impacts of the operational phase of the development.

4.7.4 Monitoring

There is no requirement for land-use monitoring.

4.8 Community Infrastructure and Social Facilities

Community infrastructure can generally be defined as services and facilities that are available to the residents of any given area. These include early childcare and educational facilities, open spaces, recreational, and sporting facilities, community centres and halls, retail provision, healthcare facilities, and religious buildings. The current situation in relation to these facilities in the subject area is set out in the following sections and is also subject to a separate report prepared by Downey, which forms part of the planning application documentation.

4.8.1 Early Childcare & Educational Facilities

4.8.1.1 Childcare Facilities

As seen on the TUSLA map below, there are a number of registered childcare providers in the area and Downey have contacted them to determine their current capacity. The details of these childcare facilities are outlined in the table on the next page.

It is important to note that not all the childcare facilities decided to participate in the assessment, however the information obtained from our efforts indicates that there is spare capacity within the existing operators in the area which could cater for the proposed development, i.e. a total of 5 no. childcare spaces and 15 further spaces are available for 2023.

This is further supported by the proposed childcare facility of 565 sqm capable of accommodating circa 89 children. This is submitted to be 9 no. spaces over what was initially projected to suffice the proposed scheme. For further information, refer to the *Childcare Provision Assessment Report* prepared by Downey. Considering the available capacity of the existing childcare facilities, Downey are of the considered opinion that while there is a significant number of childcare facilities within the area, the quantum of units being proposed as part of this development would justify the provision of

a new childcare facility which forms part of this proposed development, and this new childcare would cater both the residents of the application site and its wider community.

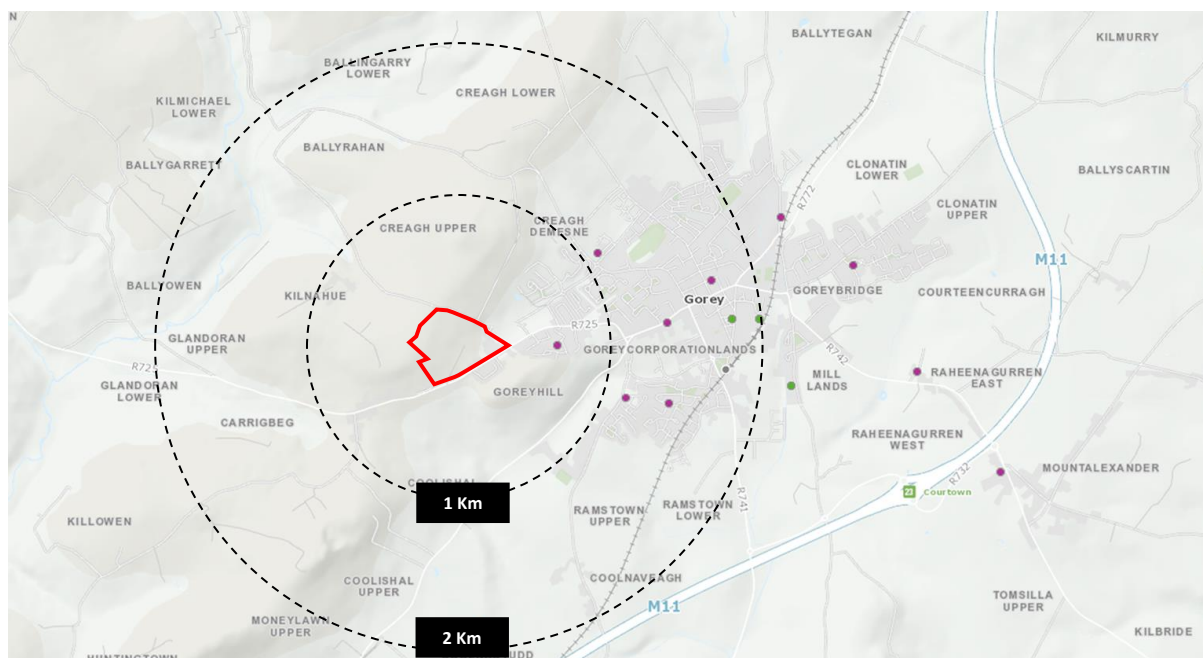


Figure 4-6. Location of Childcare Facilities within 1-2km of the Subject Lands (approximate boundaries of the lands outlined in red) (Source: pobal.ie)

Table 4-7. Childcare Facilities within 1-2km Radius of the Subject Lands (source: Tulsa.ie)

	Name	Address	Max Capacity	Type of Service Age Profile
Within 1km Radius of the Subject Lands	Little Lambs Montessori & Creche	49 Ardmore Carnew Road, Gorey, Co. Wexford	34 children	Full Day/Part time/Sessional (2-6 years)
	Little Crickets Creche and Montessori	145 Pearson's Brook, Holyfort Road, Gorey, Co. Wexford	75 children	Full Day/Part time/Sessional (0-6 years)
	Giant Steps Montessori	Christ Church Old School, Charlotte Row, Co. Wexford	22 children	Sessional (2-6 years)
	Little Oaks Academy Ltd.	Oakwood Estate, Rams town, Gorey, Co. Wexford	52 children	Full Day/Part time/Sessional (0-6 years)
	Higgy's House Creche and Montessori	Ramsgate Village, Gorey, Co. Wexford	65 children (5 spare spaces)	Full Day/Part time/Sessional (1-6 years)
	Sr. Clemen's Community Playschool Ltd.	Grattan Terrace, Gorey, Co. Wexford	44 children	Sessional (2-6 years)
	Little Daisies Community Childcare	Gorey Community Youth and Childcare, Gorey, Co. Wexford	67 children	Full Day/Part time/Sessional (0-6 years)

	Name	Address	Max Capacity	Type of Service Age Profile
Above 2km Radius of the Subject Lands	CILA Pre-school	St. Aidan's Services, Millands, Gorey, Co. Wexford	8 children	Sessional (2-6 years)
	Small Wonders Creche and Pre-school	Courtown Road, Gorey, Co. Wexford	29 children	Full Day/Part time/Sessional (0-6 years)
	1.2.3. Academy Pre-School & Montessori	3 Clonattin Village, Gorey, Co. Wexford	32 children	Sessional (2-6 years)
	Erika's Fairy Wood	Castlerock, Clonattin Lwr, College Rd, Gorey, Co. Wexford	63 children (15 spare spaces for 2023)	Full Day/Part time/Sessional (2-6 years)
	Caroline's Treasures Little Montessori School	Courtown Road, Gorey, Co. Wexford	22 children	Sessional (2-6 years)
Total Maximum Potential Capacity			513 Children (20 spare spaces)	

4.8.1.2 Primary Schools

There are three primary schools within one kilometre radius, and three primary schools within two kilometres radius of the subject site. Downey attempted to contact the schools with regard to their available capacity, however, the level of feedback was low. The feedback received did not indicate exact numbers, but it was suggested that 66 no. spaces are available currently and this can be stretched to provide for up 93 spare capacities within the primary schools in the vicinity of the site.

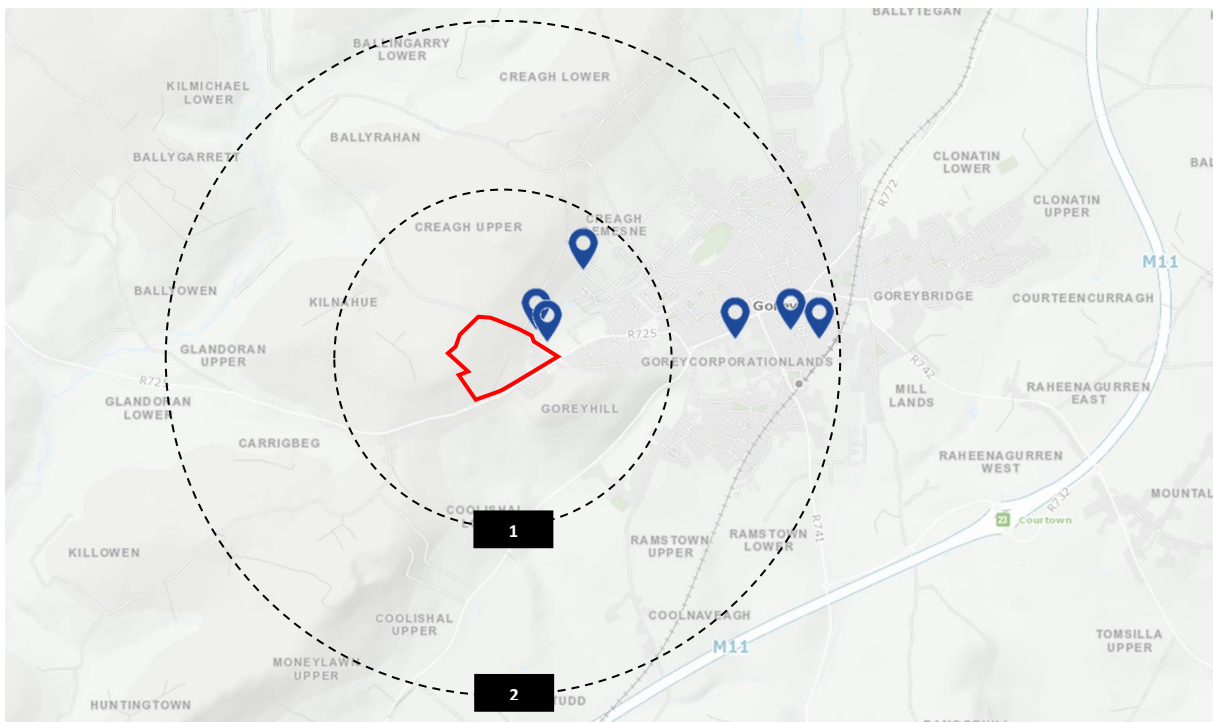


Figure 4-7. Location of Primary Schools (approximate boundaries of the subject site outlined in red)

Table 4-8. Primary Schools within 1-2km Radius of the Subject Lands (source: DoES & Schooldays.ie)

	Roll No.	Name	Address	Enrolment 2021-22
Within 1 Km Radius of the Subject Lands	20214H	Gorey Educate Together National School	Kilnahue Lane, Carnew Road, Gorey, Co. Wexford	Boys: 212 Girls: 187
	20165U	Gaelscoil Mhoshiolog	Clonattin Guaire Co Loch Garman, Co. Wexford	Boys: 98 Girls: 100
	18280I	Scoil Naomh Ioseph	Creagh Demesne, Gorey, Co. Wexford	Boys: 316 Girls: 214
Within 2 Km Radius of the Subject Lands	15407O	Scoil Baile Thomais	Baile Thomais, Gorey, Co. Wexford	Boys: 19 Girls: 45
	16145P	Bunscoil Loreto	Gorey, Co. Wexford	Boys: 279 Girls: 379
	19419S	Gorey Central School	Lár Scoil Guaire, Charlotte Row, Gorey, Co. Wexford	Boys: 118 Girls: 94
Total Potential Capacity				Boys: 1,042 Girls: 1,019
				Overall: 2,061

Therefore, Downey are of the considered opinion that there is suitable capacity within and close proximity to the area at a National School level to accommodate the proposed development. For further details in this regard, please refer to the School Demand Assessment prepared by Downey and submitted under a separate cover as part of this application.

4.8.1.3 Post-primary Schools

There are two primary schools within one kilometre radius, and one primary school within two kilometres radius of the subject site. Downey attempted to contact the schools with regard to their available capacity, however, the level of feedback was low. The feedback received did not indicate exact numbers, but it was suggested there is some spare capacity within the secondary schools in the vicinity of the site.

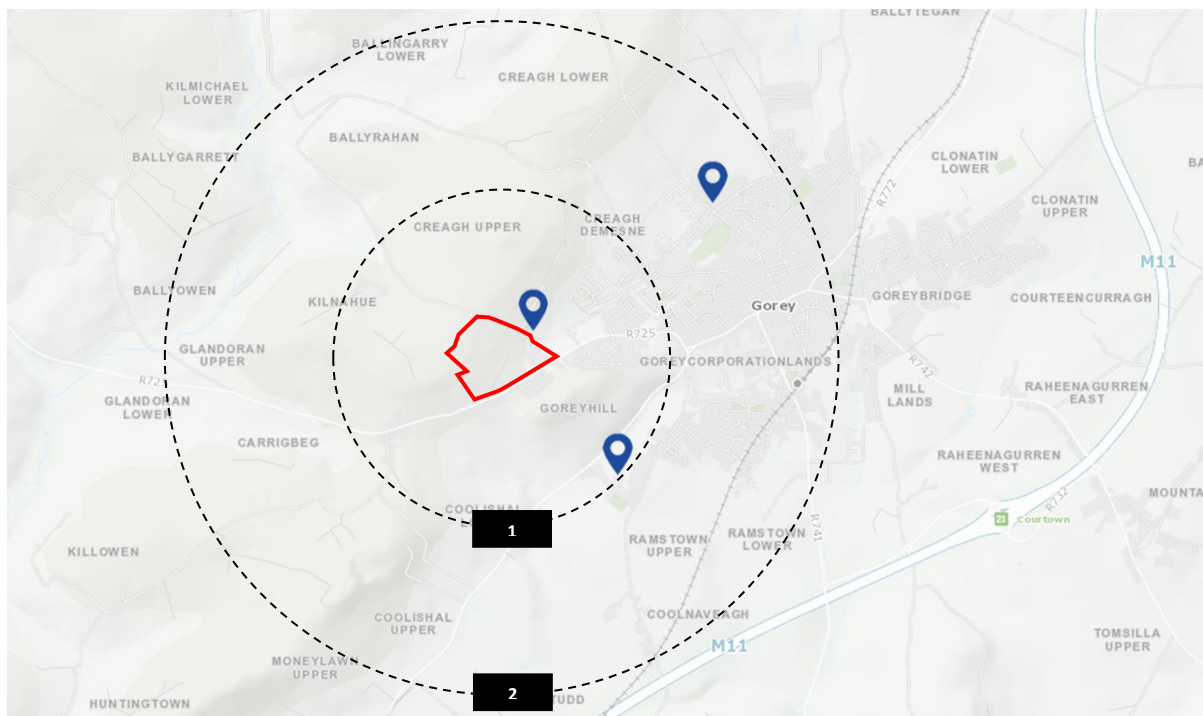


Figure 4-8. Location of Post-primary Schools (approximate boundaries of the subject site outlined in red)

In addition, the Gorey Educate Together is a new secondary school opened in September 2021. The school is expected to provide 600 no. school places in total when fully established, however, as confirmed by the school, it is capable of taking up to 1,000 students. Therefore, Downey are of the considered opinion that there is suitable capacity within the area at a Secondary School level to accommodate the proposed development. For further details in this regard, please refer to the School Demand Assessment prepared by Downey and submitted under a separate cover as part of this application.

Table 4-9. Post-primary Schools within 1-2km Radius of the Subject Lands (source: Schooldays.ie)

Name		Address	Enrolment
Within 2 Km Radius of the Subject Lands	Creagh College Gorey	Creagh Demesne, Gorey, Co. Wexford	Boys: 527 Girls: 456
	Gorey Community College	Esmonde Street Gorey Co. Wexford	Boys: 791 Girls: 757
	Gorey Educate Together Secondary	Fort Road, Creagh, Gorey, Co. Wexford	Boys: 21 Girls: 14 (Expected capacity of 600 pupils)

4.8.2 Recreational Facilities

This part of the Audit assesses the number and location of existing recreational facilities that are within 1-2km radius of the subject lands. It will include parks, playing fields, community centres and gyms, etc. categorised as indoor and outdoor recreational facilities.

4.8.2.1 Indoor Leisure & Recreational Facilities

It can be seen in the Figure 4-9 below, there are a number of sport centres and fitness facilities, a library, and several community-related facilities within 1-2km radius of the proposed development.

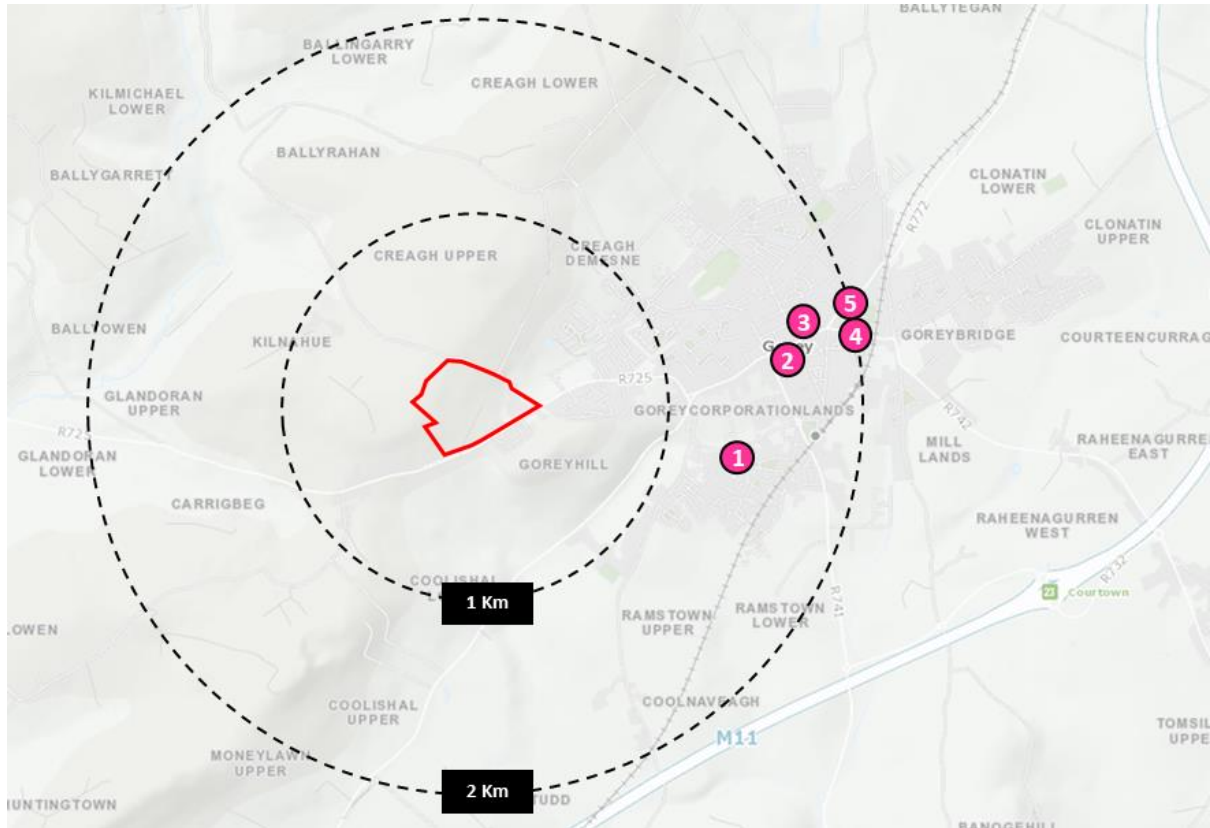


Figure 4-9. Location of Indoor Recreational Facilities (approximate boundaries of the subject site outlined in red)

Accordingly, there is a notable range of indoor sporting activities within 1-2km radius of the subject lands including, gyms, yoga studios, personal trainers, etc. Furthermore, there are 3 no. community centres within a convenient distance of the proposed development.

The Gorey Library is also located within 2km radius of the subject lands, supporting a wide range of services including free internet and WiFi, research facilities, children and schools support, special events, exhibitions, and community-related activities for different age groups. The relevant details on these facilities are outlined in the Table 4-10 below.

It is important to note that the proposed development includes a community building providing for 2 no. community rooms which can facilitate group activities, social support, public information, and other purposes for the prospective residents of the scheme and its wider context.

Table 4-10. Indoor Leisure & Recreational Facilities within 1-2km Radius of the Subject Lands

	No.	Name	Location	Type
Gyms and Leisure Facilities	1	David Clince Strength & Conditioning	63 Eire St, Gorey corporation lands, Gorey, Co. Wexford	Personal Trainer
	2	Yoga Atma Gorey	Market Square, Gorey corporation lands, Gorey, Co. Wexford	Yoga Studio

3	Sprint Spinning Studio	Pearse St, Gorey corporation lands, Gorey, Co. Wexford	Gym
4	Curves Gorey	21 Esmonde St, Goreybridge, Gorey, Co. Wexford	Fitness Centre
5	Gorey Boxing Club	Goreybridge, Co. Wexford	Boxing Gym

4.8.2.2 Outdoor Leisure & Recreational Facilities

There is a huge range of outdoor recreational facilities within the 1-2km radius of the subject site and its wider area. This includes sports clubs, a rugby club, a boxing club, playing pitches, and a variety of open green spaces (Figure 4-10). The location of subject lands is approximately 1.7km from the Gorey Town & District Park, indicating a good level of site accessibility to quality green open space, which provides a wide range of recreational facilities. The relevant details of these amenities are outlined in Furthermore, as part of the overall scheme for the subject lands, the proposed development enjoys a large Parkland along its western boundaries and numerous small pockets parks, shared green spaces, and communal open space throughout the lands interlinked with the network of green spaces to its wider context. The proposed parkland extends to approximately 2.8 ha, comprising of a large size playground, a MUGA, a natural play area, and woodland walk, all well-integrated with the site setting. This is further complemented by several kickabout areas proposed across the development. Noted that sensory experiences have also been integrated throughout the landscape design of the proposed Parkland.

Table 4-11.

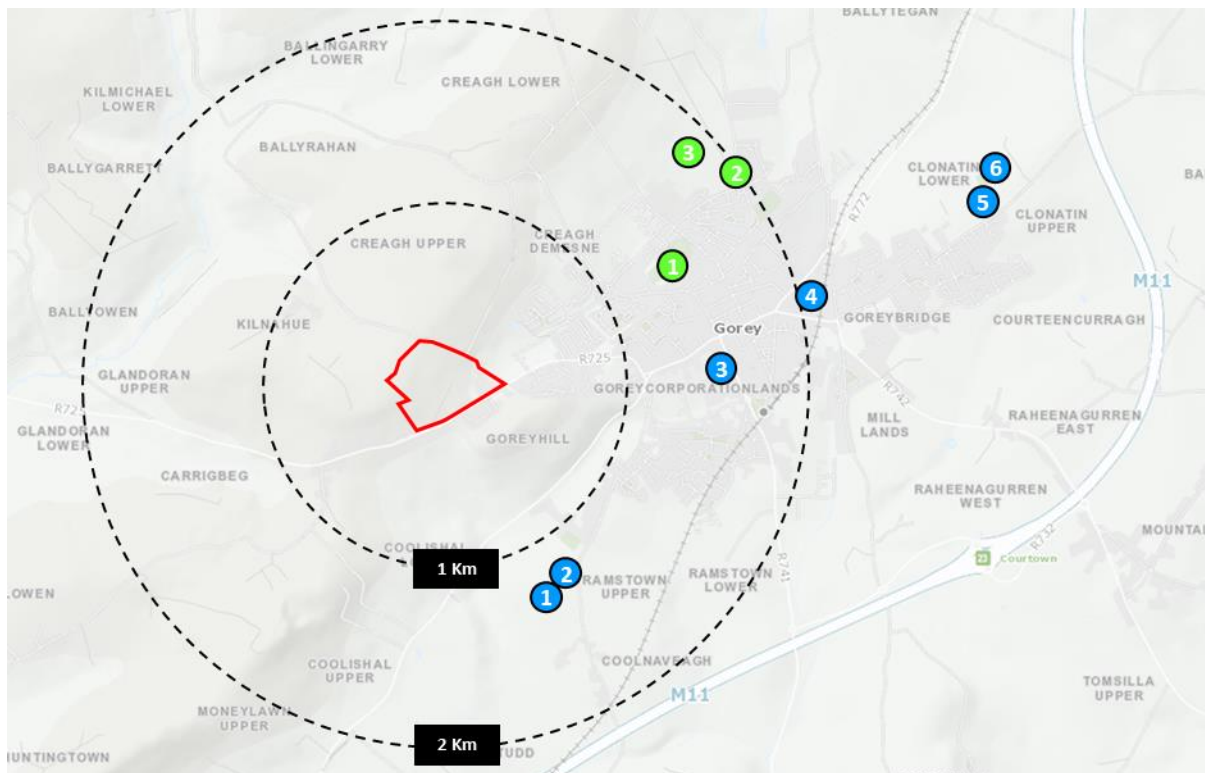


Figure 4-10. Location of Outdoor Recreational Facilities (approximate boundaries of the subject site outlined in red)

The Gorey Town & District Park is a high quality landscaped park appearing as a landmark within the area. The Park comprises of a large playground, outdoor gym equipment, a walking track, a skatepark, and two football fields. Noted that sensory experiences are also integrated within the landscape design of the park, providing for an engaging park experience for its users.



Figure 4-11. Skatepark and Playground in Gorey Town & District Park

Furthermore, as part of the overall scheme for the subject lands, the proposed development enjoys a large Parkland along its western boundaries and numerous small pockets parks, shared green spaces, and communal open space throughout the lands interlinked with the network of green spaces to its wider context. The proposed parkland extends to approximately 2.8 ha, comprising of a large size playground, a MUGA, a natural play area, and woodland walk, all well-integrated with the site setting. This is further complemented by several kickabout areas proposed across the development. Noted that sensory experiences have also been integrated throughout the landscape design of the proposed Parkland.

Table 4-11. Outdoor Leisure & Recreational Facilities within 1-2km Radius of the Subject Lands

	No.	Name	Location	Type
Sport Clubs & Outdoor Exercise	1	Gorey Rangers FC	Ramstown Upper, Co. Wexford	Football Club
	2	Gorey Grappling Academy	Ramstown Upper, Gorey Business Park, Co. Wexford	Sports Club
	3	The Exercise Park Gorey	Gorey corporation lands, Co. Wexford	Outdoor Exercise
	4	Gorey Boxing Club	Esmonde St, Goreybridge, Co. Wexford	Boxing Club
	5	Naomh Eanna GAA Club	Naomh Eanna, Clonatin Upper, Gorey, Co. Wexford	Sports Club
	6	Gorey Rugby Club	Clonattin Rd, Clonatin Upper, Gorey, Co. Wexford	Rugby Club
Outdoor Recreational & Park Facilities	1	Gorey Town & District Park	53 Creagh Demesne, Gorey corporation lands, Gorey, Co. Wexford	Park
	2	Ramsfort Woods	Clonatin Lower, Co. Wexford	Park
	3	Creagh Woods	Ballowen, Co. Wexford	Park

This parkland along with other open spaces will serve not only the future residents of the scheme, but also the wider community as it will be accessible through multiple pedestrian access points. Moreover, the soft landscaping will be designed to support a mixture of uses for the full range of occupant demographics. The premise of this approach is to promote a sense of community through providing a hierarchy of outdoor places.



Figure 4-12. Proposed Hierarchy of Green Open Spaces within the Scheme

Therefore, Downey are of the considered opinion that there is suitable capacity within the area for the recreational and leisure facilities to accommodate the proposed development. This would be complemented by the proposed Parkland and range of open green spaces within the development.

4.8.3 Retail Provision

The Audit will now look further into the subject site within the retail hierarchy in its wider area and Gorey, providing details on the number and location of retail provision within proximity of the subject site. These provide an important function in the overall quality of life for the future residents of the proposed development. In this regard, it is noted that the retail provision ranges from large convenience food supermarkets to comparable good facilities within 1-2km of the subject site and its wider area. Further details are outlined in Table 4-12.

With respect to Wexford Retail Hierarchy, the Gorey Town Centre, as a level 2 retail provision is located within 2km radius of the subject lands. Outlined in the adopted County Development Plan, Gorey accounts for 21% of the net retail floorspace of the four towns in Wexford, with 39,001 sqm. It provides a range of national supermarket retailers and general comparison goods shopping. The existing primary retail provision in Gorey is centred at Gorey Shopping Centre and Main Street, with secondary shopping frontage on Esmonde Street and The Avenue. The retail representation consists mainly of independent retailers providing a range of goods and services, all complemented by some national and international retailers established within the town.

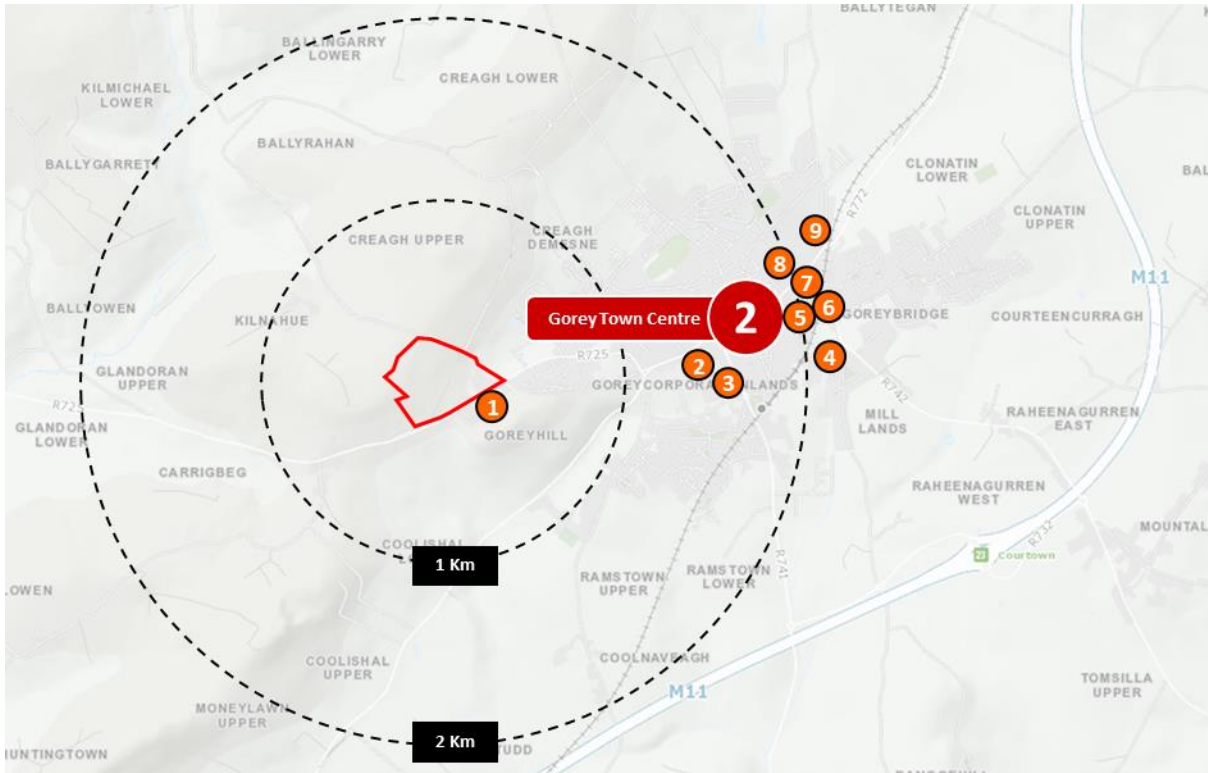


Figure 4-13. Subject Site within Retail Hierarchy of Gorey Town Centre and its Retail Provision (approximate boundaries of the subject site outlined in red)

In relation to convenience retailing, Gorey has a number of different formats which include a traditional grocer, a mix of independent local shops and a number of franchise stores such as Centra, Gala and Spar, with a number of non-Irish specialty stores such Eurostore and Polski Store. Gorey also has a number of the larger national and international supermarket chains, such as Tesco, Dunnes Stores, Supervalu, Aldi and Lidl which are all within or adjacent to the town centre.



Figure 4-14. Gorey Shopping Centre

Gorey Shopping Centre, which is anchored by the largest Dunnes Stores in the South-East, have 20 stores spanning nearly 14,000 sqm. Furthermore, there is a Londis service station at the southern corner of the subject lands, which can also cater for the proposed development. Noted that the proposed development also provisioned for retail, and this includes two no. retail units within the proposed building adjoining Kilnahue Lane (c. 210 sqm).



Figure 4-15. Retail offerings along Carnew Road (R725)

Table 4-12. List of Retail Facilities in Proximity of the Subject Site

No.	Name	Location	Type
1	P and H Doyle Londis Service Station	Carnew Rd, Goreyhill, Gorey, Co. Wexford	Petrol station, Convenience Store
2	Tesco Extra	Ramstown Lower, Gorey, Co. Wexford	Supermarket
3	Dunnes Stores	Gorey Shopping Centre, The Avenue, Gorey, Co. Wexford	Supermarket
4	Iceland Gorey	Gorey Retail Park, Courtown Rd, Gorey, Co. Wexford	Supermarket
5	Blas ón bPolainn	27-28 Esmonde St, Goreybridge, Gorey, Co. Wexford	Grocery Store
6	ALDI	Goreybridge, Gorey, Co. Wexford	Supermarket
7	Lidl	Arklow Street, Goreybridge, Gorey, Co. Wexford	Grocery Store
8	Spar Express	Arklow Road, Gorey, Co. Wexford	Grocery Store
9	Orlik - Polski Sklep	Unit 2, Ambassador Retail Park, Arklow Rd, Goreybridge, Gorey, Co. Wexford	Supermarket

Therefore, Downey are of the considered opinion that there is adequate retail provision catering for the influx of new population into the area.

4.8.4 Healthcare Facilities

As shown on Figure 4-16, there is a wide range of healthcare facilities within 2km radius of the subject site and its wider area. This includes GP clinics, health centres, pharmacies, dental practice, nursing home, and out of hours GP's. The relevant details on the healthcare provision in the area is listed in Table 4-13.

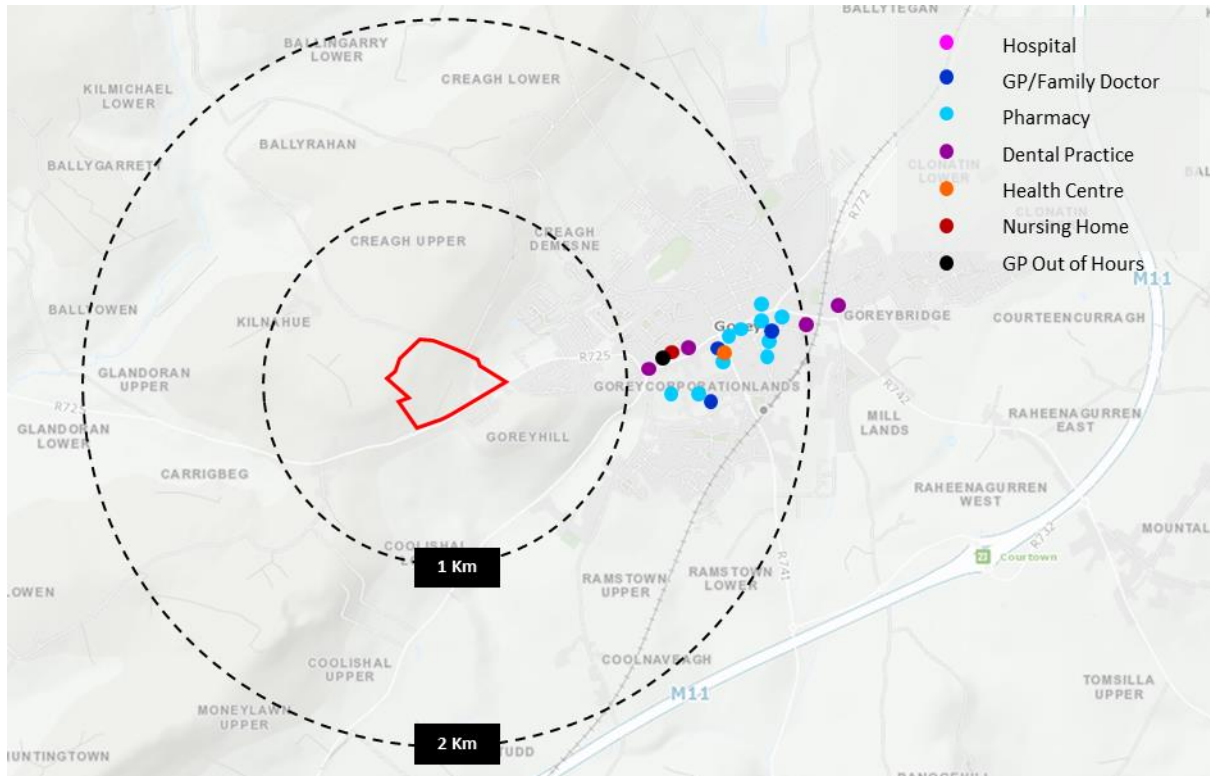


Figure 4-16. Location of Healthcare Facilities within 1-2km Radius of the Subject Site and its Wider Area (approximate boundaries of the subject site outlined in red)

Furthermore, the Wexford General Hospital is located within approximately 48.9 km of the subject lands, and this is a c. 39-minute driving distance via M11.

Table 4-13. List of Healthcare Facilities in Proximity of the Subject Site

Name	Location	Type
Wexford General Hospital	Newtown Rd, Carricklawn, Co. Wexford	Hospital
Gorey Medical Practice	Conal House, Saint Michael's Road, Gorey, Co. Wexford	Family Practice
The Palms Surgery	The Avenue, Gorey, Co. Wexford	Family Practice
Gorey Family Practice	st Floor Gorey Shopping Centre, The Avenue, Gorey, Co. Wexford	Family Practice
Tesco Pharmacy	Tesco Extra, Ramstown Lower, Gorey, Co. Wexford	Pharmacy
Hickey's Pharmacy	Unit 18a Gorey Shopping Centre, The Avenue, Gorey, Co. Wexford	Pharmacy
Grant's Pharmacy	Block A, the Palms Centre, The Avenue, Gorey, Co. Wexford	Pharmacy
McCabes Pharmacy	69 Main Street, Gorey, Co. Wexford	Pharmacy
Wade's Totalhealth	76 Main Street, Gorey, Co. Wexford	Pharmacy

Name	Location	Type
Boots	85/86 Main Street, Gorey, Co. Wexford	Pharmacy
Roche's Allcare Pharmacy	14 Main Street, Gorey, Co. Wexford	Pharmacy
Gorey Pharmacy	Conal House, Saint Michael's Road, Gorey, Co. Wexford	Pharmacy
Whelan's Pharmacy	Pugin Court, Saint Michael's Road, Gorey, Co. Wexford	Pharmacy
DocMorris Pharmacy	Lower Main Street, Gorey, Co. Wexford	Pharmacy
Gorey Dental Practice	34 McCurtain Street, Gorey, Co. Wexford	Dental Practice
Georg Bartmann	3 Charlotte Row, Gorey, Co. Wexford	Dental Practice
Wexford Orthodontics	16a Lower Esmonde Street, Gorey, Co. Wexford	Dental Practice
Bridge Dental Surgery	Bridge Corner, The Coach Road, Gorey, Co. Wexford	Dental Practice
Gorey Primary Care Centre PCC	The Avenue, Gorey, Co. Wexford	Health Centre
Gorey District Hospital	HSE, Gorey District Hospital, Gorey, Co. Wexford	Nursing Home
Caredoc	Gorey District Hospital, Gorey, Co. Wexford	GP Out of Hours

4.8.5 Religious and Community Provision

There are 3 no. religious centres in the area including Christian and Catholic churches, 3 no. community halls, and 1 no. library. The details on these facilities are summarised in Table 4-14.

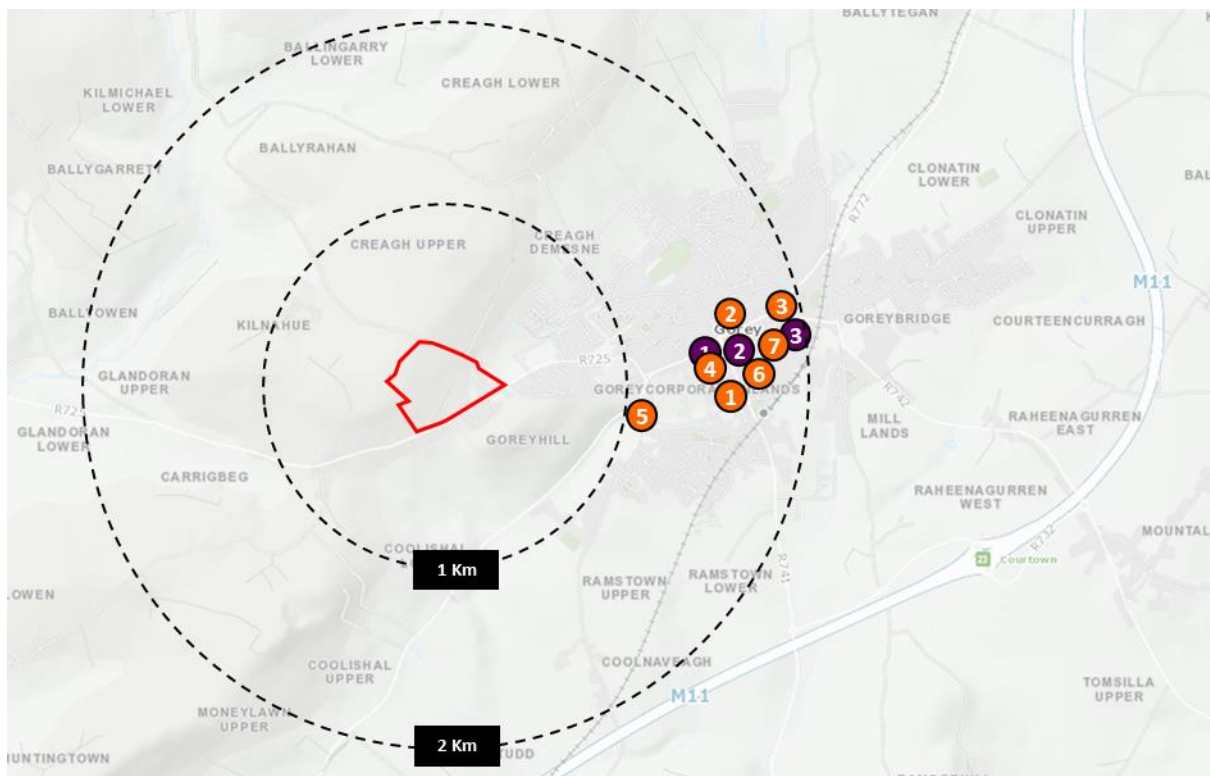


Figure 4-17. Location of Religious & Community Facilities within 1-2km Radius of the Subject Site and its Wider Area (approximate boundaries of the subject site outlined in red)

Taking into consideration the scale of the proposal, and the influx of new population into the area, the existing facilities prove to be sufficient and meet the needs of the proposed development.

Table 4-14. List of Religious & Community Facilities in Proximity of the Subject Site

No.	Name	Location	Type
1	Christ Church	Gorey corporation lands, Co. Wexford	Christian Church
2	Methodist and Wesleyan Chapel	Market Square, Gorey corporation lands, Gorey, Co. Wexford	Church
3	St Michael's Church	St Michael's Rd, Mill Lands, Gorey, Co. Wexford	Catholic Church
1	Freemasons Community Centre	Gorey corporation lands, Co. Wexford	Community Centre
2	Ardamine Community Centre	Ardamine Rectory, Courttown, Gorey, Co. Wexford	Community Centre
3	The Scout Hall	Goreybridge, Co. Wexford	Community Centre
4	Gorey Library	Gorey corporation lands, Co. Wexford	Library

As mentioned earlier, the proposed development also includes 2 no. community rooms with an overall area of c. 132 sqm and 2 no. small retail units with an overall area of 210 sqm. The retail units are to meet the local need of residents.

4.9 Potential Impact of the Proposed Development

4.9.1 Construction Phase

Construction impacts are expected to be short term, but some potential adverse local impacts can be expected due to the actual construction of the development. This is likely to be associated with construction traffic and any possible nuisance with such movements, for example an increase in daytime noise levels. The resident community in adjoining housing developments are most likely to be affected by these short-term temporary impacts. Corresponding mitigation measures are set out in Chapter 9 which will reduce these impacts to an insignificant level. Noting the inclusion of this mitigation plan, any further assessment in relation to noise impact was not considered relevant.

The development may also have some positive impacts on passive recreational facilities within the area with additional revenue being derived from the use of these facilities by the construction workers. Impacts to the local population are considered to be neutral, imperceptible, temporary in nature and therefore not considered significant.

4.9.2 Operational Phase

The proposed development could have the following potential operational impacts:

- 1) An increase in traffic levels.
- 2) Additional demand on local community services.
- 3) An impact on the landscape and appearance in the area.

4) Increased demands on services infrastructure.

The predicted population increase arising from the proposed development will generate additional traffic loads in the area, although the analysis of the road network surrounding the subject site has shown that the existing and proposed junctions will operate well below capacity for the future assessment years with the baseline traffic factored up and the inclusion of the proposed development trips. The surrounding network can cater for the proposed development trips and the increase in traffic over the baseline conditions will be minimal on the surrounding road network. The provision of new pedestrian and cycling facilities within the proposed development and externally connecting to the existing network will result in a positive effect on sustainable transport modes. The impacts in this regard are set out in detail in Chapter 12.0 Traffic & Transportation.

The resident community will benefit from the additional passive amenity areas, to be provided as part of the proposed development. There is a public park and several open spaces being put forward as part of the proposed development, in particular areas of public open space containing play equipment for children that will be available for future residents and the wider community, which will add to recreational amenity of the area and will have a positive impact on health for the overall area.

4.9.3 Remedial and Reductive Measures

4.9.3.1 Construction Phase

Measures to mitigate potential impacts arising from the construction phase of the proposed development such as noise are set out in relevant chapters of this EIAR.

4.9.3.2 Operational Phase

The proposed development will have a positive impact on the local community and will positively contribute to the vitality and viability of the local area, as well as passive amenity and open space provision.

4.9.4 Predicted Impact of the Proposed Development

4.9.4.1 Construction Phase

Through the implementation of remedial and reductive measures that have been set out above, the impacts of the construction phase of the development are not anticipated to be significant. Furthermore, all impacts will be temporary in nature.

4.9.4.2 Operational Phase

The predicted impact is the same as that set out under the potential impacts of the operation phase of the development.

4.9.5 Monitoring

There is no requirement for community monitoring.

4.10 Human Health

The subject lands are located at Kilnahue & Gorey Hill, Carnew Road & Kilnahue Lane, Gorey, County Wexford. The surrounding built environment is predominantly characterised by detached dwellings on single plots, as well as smaller-scale residential developments in a variety of designs and layouts, particularly along Carnew Road, the R725. The site slopes from west to east, towards the town and from north to south. The site's boundaries comprise of native hedgerows with a number of trees interspersed throughout. Given the sites proximity to Gorey's town centre, there is also commercial activity in the area. As a result, there is both a resident and working population in the immediate vicinity of the proposed Project. Human health is therefore a key consideration for assessment.

The proposed development will provide for the development of the subject lands and provide a mixed-use development that will be integrated with the surrounding area. The proposed development will make a positive contribution to the existing community by creating new places and spaces that are accessible not only to the residents of the scheme, but also to members of the public. It is submitted that the completion of the proposed development will not have an adverse impact on human health including mental health or wellbeing. Furthermore, there will be no adverse impacts on social, economic, or environmental living conditions as a result of the development.

4.10.1 Potential Impact of the Proposed Development

4.10.1.1 Construction Phase

Construction impacts are expected to be short term, but some potential adverse local impacts can be expected due to the actual construction of the development. These impacts are likely to be associated with construction traffic movements and any possible nuisance with such movements, for example an increase in daytime noise levels, migration of surface contaminants, and dust.

The resident community in adjoining housing estates are most likely to be affected by these short term temporary impacts. Corresponding mitigation measures are set out in Chapter 9.0 which will reduce these impacts to an insignificant level. Noting the minor nature of these impacts, any further assessment in this regard was not considered relevant.

The development may also have some positive impacts on passive recreational facilities within the area with additional revenue being derived from the use of these facilities by the construction workers.

4.10.1.2 Operational Phase

The proposed development could have the following potential operational impacts as a result of an increase in population levels:

- 1) An increase in traffic levels.
- 2) Additional demand on local community services.
- 3) An impact on the landscape and appearance in the area.
- 4) Increased demands on services infrastructure.

The impacts in regard to additional traffic loads in the Kilnahue area generated by the predicted population increase are set out in detail in Transportation Chapter of this EIAR.

In relation to potential impacts on human health and safety during the operational phase are unlikely to result in any significant adverse impacts once the development is completed and operational. Environmental impacts of the proposed development and their relationship to human health is dealt with under the relevant noise and vibration, air and climate and traffic sections of the EIAR. There will not be significant impacts on human health as a result of the operation of the proposed development.

4.10.2 Remedial and Reductive Measures

4.10.2.1 Construction Phase

Measures to mitigate potential impacts arising from the construction phase of the proposed development such as noise, vibration, traffic, and air quality are set out in relevant chapters of this EIAR.

4.10.2.2 Operational Phase

Measures to mitigate potential impacts arising from the operational phase of the proposed development such as noise, vibration, traffic, and air quality are set out in relevant chapters of this EIAR.

4.10.3 Predicted Impact of the Proposed Development

4.10.3.1 Construction Phase

Through the implementation of remedial and reductive measures that have been set out above, the impacts of the construction phase of the development are not anticipated to be significant. Furthermore, all impacts will be temporary in nature.

4.10.3.2 Operational Phase

The proposed development will provide a development that will be integrated with the surrounding area and existing and future transport infrastructure, including green infrastructure. The proposed development will make a positive contribution to the existing community by creating new places and spaces as well as improved permeability that are accessible not only to the residents of the scheme, but also to members of the public.

It is submitted that the proposed development at Kilnahue Lane will not have an adverse impact on human health including mental health or wellbeing. Furthermore, there will be no adverse impacts on social, economic, or environmental living conditions as a result of the proposed development.

4.11 Monitoring

In terms of population and human health, measures to avoid negative impacts have been a key consideration in the design evolution of the buildings and overall layout of the proposed project. Conditions will be attached to any grant of planning permission to ensure compliance in this regard. Building Regulations will also be adhered to during the construction phase to ensure a fully compliant development is constructed.

Health and Safety requirements, which are site specific to the proposed project, will be carried out by the Project Manager on site.

Impacts from Air Quality, Noise and Vibration, Climate, and Traffic and Transport and monitoring measures in this regard are addressed in the relevant chapters of this EIAR.

4.12 Reinstatement

No reinstatement will be required specifically for population and human health.

4.13 Interactions

The main interactions relating to population and human health are water, air quality, noise, and traffic during the construction phase.

Construction activities will have a temporary impact the landscape of the area by way of visual disturbance. These impacts are not considered to be significant.

During the operational phase, the main interactions relating to population and human health are water, air quality, noise, and traffic. These impacts are not considered to be significant. Please refer to the associated chapters for further information on these interactions.

4.14 Difficulties Encountered in Compiling

Overall, no difficulties were encountered in compiling this chapter.

4.15 Cumulative Impacts

The assessment has considered cumulative impacts of construction and operational phases of the proposed project, in conjunction with surrounding developments.

Multiple sites under construction at the one time may result in cumulative impacts in terms of noise and vibration during the construction period for human beings. However, such impacts are short-term, and the implementation of appropriate mitigation measures will ensure that noise and vibration impact is kept to a minimum. Please refer to Chapter 9.0 for further details in this regard.

During the operational phase of the development, there will be residential, recreational, and commercial developments in proximity to the proposed project which will generate a synergy of uses. This will increase population, increase employment opportunities, and increase community facilities such as childcare facilities, and as such the long-term effect will be a positive and permanent impact for Kilnahue and the overall town.

4.16 “Do Nothing” Impact

A “Do Nothing” scenario is not considered appropriate as the lands are currently zoned for residential and open space development under the Gorey Town & Environs Local Area Plan 2017-2023. However, if a do-nothing scenario were to occur, the lands would not be developed and therefore would be no adverse impacts to population and human health. In the event that the proposed Project does not proceed, the lands would remain in its current condition in the short-term or until alternative development proposals are granted planning permission.

4.17 References

- Central Statistics Office [CSO] (Census data results and analysis from 2011 and 2016)
- CSO (2021). Quarterly Labour Force Survey Q1 2021
- Economic and Social Research Institute [ESRI] (data results and analysis)
- Southern Regional Assembly (2019), Regional Spatial and Economic Strategy 2019-2031
- Wexford County Council, Wexford County Council Development Plan 2013-2019
- Wexford County Council, Gorey & Environs Local Area Plan 2017-2023

5.0 BIODIVERSITY

This biodiversity assessment has been prepared by Pádraic Fogarty of OPENFIELD Ecological Services. Pádraic has worked for 25 years in the environmental field and in 2007 was awarded an MSc from Sligo Institute of Technology for research into Ecological Impact Assessment (EclA) in Ireland. OPENFIELD is a full member of the Institute of Environmental Management and Assessment (IEMA). He is a competent expert for the examination of biodiversity impacts for this Environmental Impact Assessment Report.

Under Article 6(3) of the Habitats Directive an ‘appropriate assessment’ of projects must be carried out to determine if significant effects are likely to arise to Natura 2000 sites. An Appropriate Assessment Screening Report has been prepared as a separate standalone report.

5.1 Study Methodology

The assessment was carried out in accordance with the following best practice methodology: ‘The assessment was carried out in accordance with the following best practice methodology: ‘Guidelines on the information to be contained in Environmental Impact Assessment Reports’ by the Environmental Protection Agency (EPA, 2017), ‘Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland’ by the Chartered Institute of Ecology and Environmental Management (IEM, 2018), The European Commission’s “Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment” (2013) and the Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report, European Commission (2017).

Site visits were carried out on the 5th of April 2017, the 23rd of September 2020, the 22nd of January 2021 and the 28th of June 2021. On each occasion the site was surveyed in accordance with the Heritage Council’s Best Practice Guidance for Habitat Survey and Mapping (Smith et al., 2010). Habitats were identified in accordance with Fossitt’s Guide to Habitats in Ireland (Fossitt, 2000).

The nomenclature for vascular plants is taken from The New Flora of the British Isles (Stace, 2010) and for mosses and liverworts A Checklist and Census Catalogue of British and Irish Bryophytes (Hill et al., 2009).

April, June and September lie within the optimal period for general habitat surveys (Smith et al., 2010) and possible to classify all habitats on the site to Fossitt level 3. April and June lie within the optimal season for surveying breeding birds, April lies within the optimal season for surveying amphibians, January is optimal for wintering birds while January and April are optimal for surveying larger mammals, e.g. Badger and Otter.

Dedicated bat surveys were carried out by Brian Keeley of Wildlife Surveys Ireland. A dedicated Badger survey was carried out in March 2021. This report is presented separately but its findings are incorporated here.

5.2 Existing Receiving Environment

5.2.1 Zone of Influence

Best practice guidance suggests that an initial zone of influence be set at a radius of 2km for non-linear projects (IEA, 1995). However some impacts are not limited to this distance and so sensitive receptors further from the project footprint may need to be considered as this assessment progresses. This is shown in figure 1.

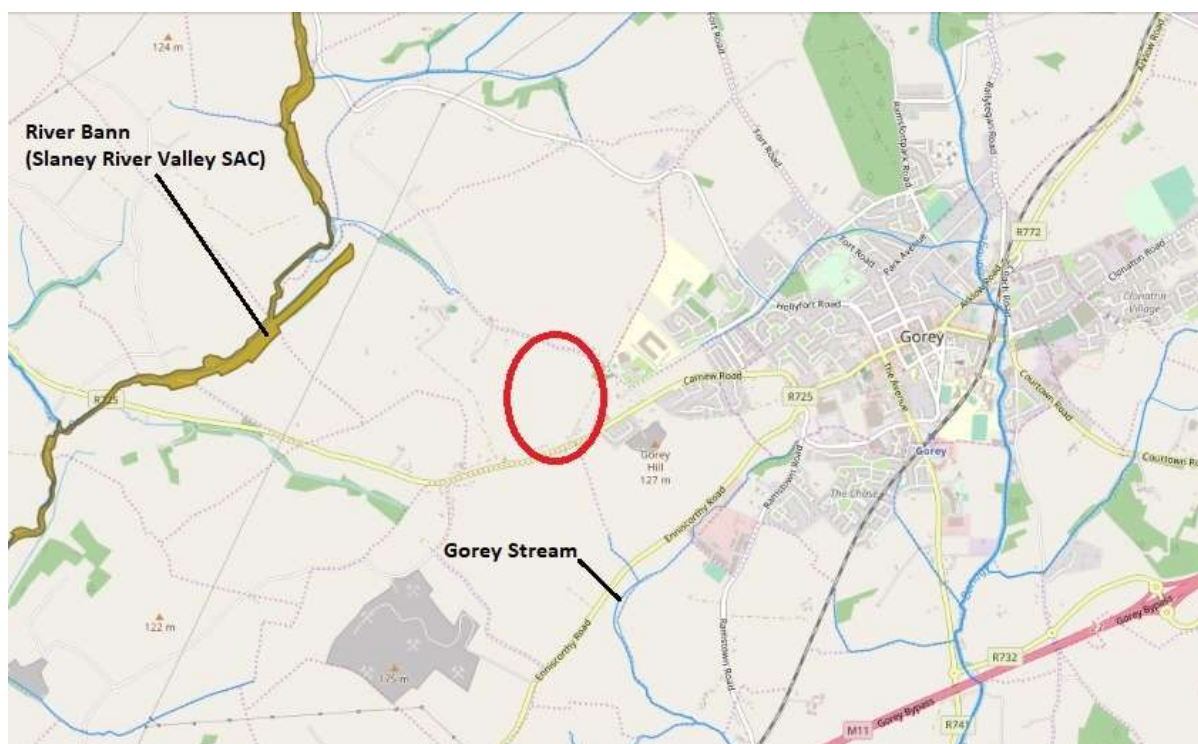


Figure 5-1. Approximate 2km radius of proposed site (red circle) showing areas designated for nature conservation. The boundary of the Slaney River Valley SAC is shown in red. There are no SPAs or NHAs in this view (from www.npws.ie).

There are a number of designations for nature conservation in Ireland including National Park, National Nature Reserve, RAMSAR site, UNESCO Biosphere reserves, Special Protection Areas (SPA – Birds Directive), Special Areas of Conservation (SAC – Habitats Directive); and Natural Heritage Areas. The mechanism for these designations is through national or international legislation. Proposed NHAs (pNHA) are areas that have yet to gain full legislative protection. They are generally protected through the relevant County Development Plan. There is no system in Ireland for the designation of sites at a local, or county level.

The site is in the catchment of the Owenavorrach River, which flows in an easterly direction, discharging to the Irish Sea at Courtown. Neither the freshwater portion of this river, nor its estuary is in an area designated for nature conservation. At its closest point the boundary of the Slaney River Valley SAC is approximately 1.2km from the site. This SAC covers a very large area stretching from the Wicklow mountains in the north to Wexford harbour and includes not only the main channel of the Slaney but also a number of its tributaries. While the Slaney and its tributaries are the principle features of the SAC, there are also important terrestrial habitats including a number of rare woodland types and the intertidal area. The reasons why this area falls under the SAC designation are set out in

its qualifying interests. They are either habitat types listed in Annex I or species listed in Annex II of the Habitats Directive. This information is provided by the National Parks and Wildlife Service (NPWS) and is shown in table 1 below along with the status of the feature at a national level (NPWS, 2019). This status refers to the most recent reporting period to the European Commission under Article 17 of the Habitats Directive.

Table 5-1. Qualifying interests of the Slaney River Valley SAC

Code	Feature of interest	Status
91E0	Alluvial wet woodlands	Bad
91A0	Old oak woodlands	Bad
1130	Estuaries	Intermediate
1140	Mudflats	Intermediate
3260	Floating river vegetation	Intermediate
1106	Atlantic salmon <i>Salmo salar</i>	Intermediate
1095	Sea lamprey <i>Petromyzon marinus</i>	Bad
1096	Brook lamprey <i>Lampetra planeri</i>	Good
1355	Otter <i>Lutra lutra</i>	Good
1029	Freshwater pearl mussel <i>Margaritifera margaritifera</i>	Bad
1099	River lamprey <i>Lampetra fluviatilis</i>	Good
1103	Twaite shad <i>Alosa fallax</i>	Bad

It should be noted that a separate Screening Report for Appropriate Assessment has been prepared, as required under EU and national legislation. This is presented as a separate report.

The web site of the National Biodiversity Data Centre (www.biodiversity.ie) contains a mapping tool that indicates known records of legally protected species within a selected Ordnance Survey (OS) 2km grid square. The Gorey Hill site is located within the square T15J and no species of protected plant is highlighted¹. It must be noted that this list cannot be seen as exhaustive as suitable habitat may be available for other important and protected species.

Water quality in rivers is monitored on an on-going basis by the Environmental Protection Agency (EPA). It assesses the pollution status of a stretch of river by analysing the invertebrates living in the substrate as different species show varying sensitivities to pollution. They arrive at a 'Q-Value' where Q1 = grossly polluted and Q5 = pristine quality (Toner et al., 2005). The Kilnahue site is not adjacent any significant water course but is within the catchment of Owenavorrhagh River. It is approximately 500m from the Banogue River at its closest point. The nearest monitoring station is downstream of Gorey Town, near the N11 road (station code RS11B020200), where water quality was most recently (2019) assessed as 'poor status' (Q3). Overall the Owenavorrhagh is assessed under the Water Framework Directive (WFD) as 'poor' or 'moderate' throughout nearly the entire catchment. These data are taken from the ENVision mapping tool on www.epa.ie.

¹ Listed on the Flora Protection Order. SI No. 356 of 2015.

5.3 Stakeholder Consultation

As the site falls within the catchment of a river system of salmonid status, Inland Fisheries Ireland was contacted for fisheries observations. A response to this was received on January 18th 2019 noting that “the Banogue and its tributaries are an important salmonid catchment and represent some of the best fisheries habitat of the entire Owenavorrhagh system. The Owenavorrhagh River catchment supports several species listed in Annex II of the Directive including Salmon, River Lamprey, Brook Lamprey, Sea Lamprey and Otter.” The response included general measures which should be incorporated into the management of the project to avoid any negative effects to aquatic life downstream.

Response:

Although there are no water courses on the development site. Mitigation measures are proposed to ensure that the risk of any pollution is minimised.

5.4 Site Survey

Aerial photography from the OSI and historic mapping shows that this area has been in agricultural use for decades if not centuries. The lands in the immediate vicinity remain in agricultural use however new residential and civic developments have seen a change in land use in recent years.

5.4.1 Flora

The subject site is agricultural in nature with fields of **improved agricultural grassland – GA1** and **tilled land – BC3**. These fields are of low biodiversity value. Traditional field boundaries remain in place and include **hedgerows – WL1** and **earth banks – BL2**. Guidance is available from the Heritage Council to differentiate between hedges of ‘higher’ and ‘lower’ significance (Foulkes et al., 2013). This is based on a scoring system for a variety of features including native species diversity, age or historical significance, structure and associated features such as ditches or badger setts, habitat connectivity and landscape significance. On these criteria the earth banks and one stretch of hedgerow along the R725 can be considered to be lower significance, largely due to the poor species diversity. There are few trees along these banks and vegetation is mostly composed of Brambles *Rubus fruticosus agg.*, Common Nettle *Urtica dioica* and rough grasses. One hedgerow bordering a home to the south is surrounded by the non-native Leyland Cypress *Cuprocyparis leylandii* and is of negligible ecological value. Other hedgerows are of higher significance. They are of historical value, appearing on early OSI maps. The boundaries to the north and east are townland boundaries and so may be of great age. One is a double line of hedge marking a former farm path or trail. They are diverse and include tree species such as Birch *Betula sp.*, Aspen *Populus tremula*, Holly *Ilex aquifolium*, Blackthorn *Prunus spinosa*, Hawthorn *Crataegus monogyna*, Rowan *Sorbus aucuparia*, Ash *Fraxinus excelsior* and Oak *Quercus sp.* The ground flora consists of Dog Violet *Viola riviniana*, Bluebells *Hyacinthoides non-scripta*, Primrose *Primula vulgaris* as well as ferns and mosses.

Old farm **buildings – BL3** are overgrown and surrounded by dense stands of the non-native Cherry Laurel *Prunus laurocerasus*. The buildings themselves are cloaked with Ivy *Hedera helix*. To the north of the buildings an area has reverted to **scrub – WS1** this is mostly Brambles with rough grasses such as Cock’s-foot *Dactylis glomerata*. These habitats are of low local biodiversity value.

There are no alien invasive species on the site as listed on Schedule 3 of SI No. 477 of 2011. There are no records of rare or protected plants from this vicinity. There are no water courses, bodies of open water or habitats which could be considered wetlands on the site.



Figure 5-2. site boundary showing habitats present

5.4.2 Fauna

The site survey included incidental sightings or proxy signs (prints, scats etc.) of faunal activity, while the presence of certain species can be concluded where there is suitable habitat within the known range of that species. Table 2 details those mammals that are protected under national or international legislation in Ireland. Cells are greyed out where records from the National Biodiversity Data Centre (NBDC) do not exist.

A number of records exist for this 10km square although suitable habitat is not available for some species, such as Otter *Lutra lutra*. Rabbit *Oryctolagus cuniculus* was observed and their burrows are to be found throughout. Fox *Vulpes vulpes* scat was also observed however these are not protected species. The old farm buildings can be considered to be of bat roost potential while the hedgerows and earth banks provide resources for foraging bats (Hundt, 2013). Dedicated bat surveys were carried out in July and August 2018 and September 2020, well within the optimal period of bat activity, as well as March 2022. The report states:

No bats were noted to roost within the site during this assessment either in 2018 or in 2020 or in 2022 and no bats or bat signs were noted in March 2021 in any of the buildings examined. There are no known bat roosts within the site. There is roost potential provided by buildings and trees but no clear evidence that these are occupied by bats. There is an indication that a brown long-eared bat may roost

in the ruins, but no bat was seen in the building or emerging from or returning to the building. This is despite several examinations of the building for bats, bat droppings or other evidence in 2018, 2020, 2021 and 2022. [...]

The most commonly encountered species in and around the site was common pipistrelle. This species was present in all survey periods and throughout the more sheltered areas of the site (i.e., the western and southwestern areas are very exposed and less suited to foraging behaviour. There is poor to nil hedgerow cover in this section.).

Bat activity prior to sunrise in 2018 indicated the presence of a roost in the houses to the north of the site but the exact location could not be proven due to access. Bat activity within and around the site prior to sunrise in 2020 was much lower than in summer 2018. In 2020, soprano pipistrelles were noted along the northern road prior to sunrise indicating that there is a likelihood that this species was roosting in one of the houses to the north of the site.

Soprano pipistrelles were not commonly encountered during the survey in 2018 or 2020 but there was higher activity in 2022 during the walked transect. The static monitor recorded a high number of passes even in years when the walked transect yielded low soprano pipistrelle activity. Soprano pipistrelles may feed within a short stretch in a sustained manner and the high number of signals may often be attributable to the same bat or very small numbers of bat.

Soprano pipistrelle activity commenced later than common pipistrelle and it is predicted that this species roosts further from the site than common pipistrelles.

Leisler's bats were very much in evidence in a summer survey in 2018 close to the houses to the north indicating the potential that there is a roost within these houses or associated buildings or trees. Leisler's bat activity was much less in 2020 and was concentrated close to a car garage to the southeast of the site while there was also a Leisler's bat signal earlier in the night to the north-east of the site. No Leisler's bats were noted in March 2022. This species is the least tolerant of low air temperatures. The temperature was 7°C by 20.50 hours during the March 2022 survey. Observations of the bat activity in March 2022 within the site indicated the presence of common and soprano pipistrelle and brown long-eared bat and a single Myotis bat signal which was most similar to Daubenton's bat in its structure.

In September 2020, Myotis bat signals were noted within the site and in a nearby garden. This was potentially a whiskered bat based on the spectrograms (graphs of the range of frequencies used against time). This bat was noted repeatedly feeding around the overgrown field area and neighbouring garden. It was present from 19.53 hours to 20.17 hours and again from 21.55 hours to 22.08 hours and occasionally throughout the rest of the night up to 05.48 hours. This bat was not seen to enter or emerge from any of the buildings within the site.

The first Myotis bat signal was noted along the hedgerow between the ruined cottage and the neighbouring garden at around 17.42 hours. The static monitor recorded the first Myotis signals close to the ruins at 17.53 hours. It is most probable that the bat was not emerging from the buildings and is roosting close-by in another location. The most likely roost site is the house and stables to the east of this field.

[...]

While there were no bat roosts identified within the site, the presence of a number of old buildings and some mature trees creates some potential for roost sites. Overall, most trees within the site do not present high suitability as roost sites. There are larger trees separating two fields that more or less form a continuous single field that covers the centre of the site.

There are no recent records of Badger *Meles meles* from this area. The Badger survey, which was carried out in March 2021 found that:

There are no badger setts within the site. Most mammal evidence was of rabbit warrens. There was also widespread evidence of fox activity (paw prints, scats, scent). Rat prints were also noted. In all, there were only two clear badger law prints within the site. One of these was leading from the track (possible right of way) to the remnants of a good hedgerow in the central field and north of here on the same field edge leading towards a farm gate onto the northern road.

There were no signs of badger digging and no badger latrines within the site. The badger paw prints were very recent and undisturbed. Given that local dogs were seen within the field, it is probable that the prints were less than two to three days old, or they would have been partially obscured by dog paw prints or rain.

Small mammals, such as Irish Stoat, Pygmy Shrew and Hedgehog are considered more or less ubiquitous in the Irish countryside (Lysaght & Marnell, 2016).

April is within the suitable season for surveying breeding birds. The purpose of the survey was to identify all species of birds breeding on the site or displaying breeding behaviour (singing, holding territory, carrying nesting or feeding material etc.). The surveys were carried out during the morning and were complete by noon. Birds which were recorded include Wren *Troglodytes troglodytes*, Wood Pigeon *Columba palumbus*, Starling *Sturnus vulgaris*, Robin *Erithacus rubecula*, Blackbird *Turdus merula*, Goldfinch *Carduelis carduelis*, Chaffinch *Fringilla coelops* and Yellowhammer *Emberiza citrinella*. A pair of Buzzards *Buteo buteo* was observed soaring overhead but they were not seen to land on any trees within the site. These are all birds of low conservation concern with the exception of Yellowhammer, which is of high conservation concern (Gilbert et al., 2021). Hedgerow and treelines provide the necessary cover to allow these species to breed. A single pair of Yellowhammer was observed. This bird is closely associated with arable farmland and declines in recent decades (62% range contraction since 1972) has been attributed to changes in agricultural land use. They remain widespread in County Wexford however (Balmer et al., 2013).

A repeat breeding bird survey was carried out in June 2021. This recorded Chaffinch, Blackbird, Blue Tit *Parus caeruleus*, Wren, Song Thrush *T. philomelos*. Buzzards were once again noted overhead while Yellowhammer were not noted in this occasion.

A winter bird survey was carried out in January 2021 and Rooks *Corvus frugilegus*, Great Tit *P. major*, Song Thrush, Dunnock *Prunella modularis*, Linnet *Carduelis cannabina*, Wood Pigeon, Robin, Chaffinch and Blackbird.

There are no habitats on the site which can support fish or amphibians. The Owenavorrach/Banogue river system is of salmonid status with a run of Atlantic Salmon *Salmo salar* and Brown Trout *S. trutta* along with European Eel *Anguilla Anguilla* and Lamprey species *Lampetra sp.*²

Most habitats, even highly altered ones, are likely to harbour a wide diversity of invertebrates. In Ireland only one insect is protected by law, the Marsh Fritillary butterfly *Euphydryas aurinia*, and this is not to be found in this vicinity. Other protected invertebrates are confined to freshwater and wetland habitats and so are not present on this site.

Table 5-2. Protected mammals in Ireland and their known status within the T15 10km square³. Those that are greyed out indicate either that there are no records of the species from the National Biodiversity Data Centre.

Species	Level of Protection	Habitat ⁴
Otter <i>Lutra lutra</i>	Annex II & IV Habitats Directive; Wildlife (Amendment) Act, 2000	Rivers and wetlands
Lesser horseshoe bat <i>Rhinolophus hipposideros</i>		Disused, undisturbed old buildings, caves and mines
Grey seal <i>Halichoerus grypus</i>	Annex II & V Habitats Directive; Wildlife (Amendment) Act, 2000	Coastal habitats
Common seal <i>Phocaena phocaena</i>		
Whiskered bat <i>Myotis mystacinus</i>	Annex IV Habitats Directive; Wildlife (Amendment) Act, 2000	Gardens, parks and riparian habitats
Natterer's bat <i>Myotis nattereri</i>		Woodland
Leisler's bat <i>Nyctalus leisleri</i>		Open areas roosting in attics
Brown long-eared bat <i>Plecotus auritus</i>		Woodland
Common pipistrelle <i>Pipistrellus pipistrellus</i>		Farmland, woodland and urban areas
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>		Rivers, lakes & riparian woodland
Daubenton's bat <i>Myotis daubentonii</i>		Woodlands and bridges associated with open water
Nathusius' pipistrelle <i>Pipistrellus nathusii</i>		Parkland, mixed and pine forests, riparian habitats
Irish hare <i>Lepus timidus hibernicus</i>		Annex V Habitats Directive;

² From www.wfdfish.ie

³ From the National Biodiversity Data Centre, excludes marine cetaceans

⁴ Harris & Yalden, 2008

Pine Marten <i>Martes martes</i>	Wildlife (Amendment) Act, 2000	Broad-leaved and coniferous forest
Hedgehog <i>Erinaceus europaeus</i>	Wildlife (Amendment) Act, 2000	Woodlands and hedgerows
Pygmy shrew <i>Sorex minutus</i>		Woodlands, heathland, and wetlands
Red squirrel <i>Sciurus vulgaris</i>		Woodlands
Irish stoat <i>Mustela erminea Hibernica</i>		Wide range of habitats
Badger <i>Meles meles</i>		Farmland, woodland and urban areas
Red deer <i>Cervus elaphus</i>		Woodland and open moorland
Fallow deer <i>Dama dama</i>		Mixed woodland but feeding in open habitat
Sika deer <i>Cervus Nippon</i>		Coniferous woodland and adjacent heaths

5.5 Overall Evaluation of the Context, Character, Significance and Sensitivity of the Proposed Development Site

In summary it has been seen that the development site is of low biodiversity value farmland with field boundaries of varying significance. The development site is home to four bat species. There are no examples of habitats listed on Annex I of the Habitats Directive or records of rare or protected plants. There are no species listed as alien invasive as per SI 477 of 2011. Significance criteria are available from guidance published by the National Roads Authority (NRA, 2009). From this an evaluation of the various habitats and ecological features on the site has been made and this is shown in table 3.

Table 5-3. Evaluation of the importance of habitats and species on the Gorey Hill site

Improved agricultural grassland – GA2 Arable crops – BC1 Buildings – BL3 Cypress hedgerow – WL1	Negligible ecological value
'Lower significance' hedgerow – WL1 Earth banks – BL2 Scrub – WS1	Low local value
'Higher significance' hedgerows – WL1	High local value

5.6 Characteristics of the Proposed Development

The proposed development will see the construction 421 new homes, a multi-purpose community building, and 1 no. creche facility, 2 no. retail units and 2 no. community rooms, along with amenity open space, internal access roads and connections to all essential infrastructure. It will include site clearance and a construction phase that will see extensive land clearance. It will require the demolition of old buildings, partial removal of internal field boundaries and sections of external boundaries to allow for road access.



Figure 5-3. Site layout

5.7 Potential Impact of the Proposed Development

This section provides a description of the potential impacts that the proposed development may have on biodiversity in the absence of mitigation. Methodology for determining the significance of an impact has been published by the NRA. This is based on the valuation of the ecological feature in question (table 3) and the scale of the predicted impact. In this way it is possible to assign an impact significance in a transparent and objective way. Table 4 summaries the nature of the predicted impacts.

5.8 Construction Phase

The following potential impacts are likely to occur during the construction phase in the absence of mitigation:

1. Habitat loss

There will be loss of agricultural field habitats along with buildings, scrub and low ecological value earth banks and hedgerow. It is calculated that 400m² of scrub (100% of the total) and 790m² of 'lower significance' earth bank and hedgerow (61% of the total) will be lost. In addition, 1,043m of 'higher significance' hedgerow (87% of the total) is to be removed. This is shown in figure 4.

The loss of habitat will impact upon the species currently using the lands as well as foraging territory for bats.

According to the bat and badger survey report:

There will be a loss of vegetation from the site including the removal of hedgerow. This may affect commuting bats by removing cover that allows commuting in an unlit area along the field edges. These are also landmarks by which badgers commute, but they are very also capable of moving away from hedgerow into open lands. Some hedgerows have been replaced by a simple earthen bank around or between fields. Hedgerow is better towards the southeast including a possible former tree lined track or right of way.

This is a permanent moderate negative impact for the local bat fauna with greater significance for populations roosting close to the site. It is a permanent slight negative impact for badgers based on the level of activity noted.

...there will be an impact upon the feeding activity of bats from the loss of the trees within and around the site. This will reduce feeding for bats by reducing the shelter and substrate for invertebrates. The most commonly encountered bat species are the two pipistrelle species. The presence of a Myotis species feeding within the site is uncommon and this species will lose some foraging areas.

There is potential for interruption to feeding for badgers as there is evidence of their presence within the site. This is a long-term to permanent moderate negative impact for bats. It is a permanent slight negative impact for badgers.

This cumulative loss of both high and low local value habitat is negative, significant, likely and permanent.



Figure 5-4. Trees and linear woodland habitats (earth banks and hedgerows) to be removed

2. The direct mortality of species during site clearance. This impact is most acute during the bird breeding season which can be assumed to last from March to August inclusive. Suitable habitat for nesting birds is present in treeline and hedgerow habitats. All birds nests and eggs are protected by law, regardless of species. There are no bat roosts on the site however some old trees as well as the building have bat roost potential.

This impact is potentially negative, significant, likely and permanent.

3. Pollution of water courses through the ingress of silt, oils and other toxic substances. During the construction phase there is the potential for pollution to occur from dangerous substances (oils, concrete etc.) or silt. Silt is a particularly important pollutant in salmonid habitat as it can degrade spawning gravels or directly affect fish by clogging gills. There are no habitats on, or close to the site which are of fisheries value. Nevertheless the site is on sloping land which drains to the Owenavorrhagh River, which is of salmonid status.

During this phase best practice guidance from Inland Fisheries Ireland is to be followed (IFI, 2016). This will include preventing silt laden water from leaving the site and stockpiling dangerous substances in

bunded areas. These measures will be further defined in a Construction Management Plan to be prepared by the building contractor.

This impact is potentially negative, significant, likely and permanent.

5.9 Operation Phase

The following potential impacts are likely to occur during the operation phase in the absence of mitigation:

4. Pollution of water from foul wastewater arising from the development.

Wastewater will be sent to the municipal treatment plant for Courtown-Gorey which is licenced by the EPA to discharge treated effluent into the Irish Sea (licence no.: D0046-01). The plant is operated by Irish Water. The Annual Environmental Report from the plant for 2020 (the most recent available) indicated that there were no exceedances of licence limits for that year. Analysis of water quality upstream and downstream of the outfall pipe showed that there was no observable negative impact of the discharge on the receiving environment. The plant has a design capacity of 36,000 population equivalent (P.E.) while the AER states that capacity is not likely to be exceeded within the next three years.

The subject development will add to the total loading at the treatment plant and ample capacity exists to treat the anticipated likely increase. No negative effect to water quality is expected to arise from this source.

This impact is neutral, imperceptible, unlikely and permanent.

5. Pollution of water from surface water run-off.

Change of land use and urban expansion can lead to an increased risk of local flooding and a deterioration of water quality. This arises where soil and natural vegetation, which is permeable to rainwater and slows its flow, is replaced with impermeable hard surfaces. A new drainage system will be separated from the foul network and will ultimately discharge to an open drain which leads to the Banogue River. Attenuation measures are to be incorporated into the project design and will ensure that negative effects to the quantity or quality of water leaving the site will not occur. This includes the installation of two subsurface attenuation tanks for holding storm water, to be released to the public drain at a controlled rate.

In addition, a 'Water Environment Potential Impact Appraisal Hydrology & Hydrogeology' report, prepared for this development application by Hydro G, has concluded that:

The SuDs proposals proposed for the development are extensive and provide more than the attenuation capacity required. This is deemed to adequately provide protection for the receiving waters. The discharge rate will be less than greenfield rates and there will be Defenders to remove sediment and any hydrocarbons that may arise from cars in the housing development as well as the existing load from Kilnahue Lane.

It is a proposal that presents potential for improvement in the catchment as compared to ploughing of lands (tillage), which releases sediment, and the use of fertilisers and/or pesticides. Published

information for the surface water systems in the vicinity of the site suggests that the control of sediments and Diffuse Urban Pressures require control (EPA, 2018, 2021). The provision of the Defender to intercept Kilnahue Lane’s road runoff will aid WFD efforts for improvement.

The net gain for the improvement of water quality in the local environment cannot be disputed. The proposal should assist catchment efforts towards WFD compliance.

This impact is positive, moderate, likely and permanent.

6. Artificial lighting.

According to the bat and badger survey report:

Lighting can affect different species to varying degrees and within species there is also a range of responses to introduced light ranging from minimal effects to complete avoidance. Badgers in urban areas can become very tolerant to light but in rural areas are typically in unlit areas. Bats may actively avoid lights especially if it is shining upon a roost site.

This impact is potentially negative, significant, likely and permanent.

7. No impacts are predicted to occur to any area protected for nature conservation. There are no Natura 2000 sites (Special Areas of Conservation or Special Protection Areas) within the zone of influence of this project. Although the Slaney River Valley SAC is only 1.2km to the east there is no surface or hydrological, direct or indirect, pathway to this area. A full assessment of potential effects to Natura 2000 sites is contained within a separate Screening Report for Appropriate Assessment.

Table 5-4. Significance level of likely impacts in the absence of mitigation

Impact		Significance
Construction phase		
1	Habitat loss	Significant
2	Mortality to animals during construction	Significant
3	Pollution of water during construction phase	Significant
4	Wastewater pollution	Neutral
5	Surface water pollution	Neutral
6	Artificial lighting	Significant
7	Protected areas	Neutral

Overall it can be seen that four potentially significant negative impacts are predicted to occur as a result of this project in the absence of mitigation.

5.10 Cumulative impacts

A number of the identified impacts can also act cumulatively with other impacts from similar developments in this area of Wexford. These primarily arise through the additional loading to the Courtown-Gorey Wastewater Treatment Plant. It is considered that this effect is not significant as ample capacity exists to maintain treatment levels to the requirements of the Urban Wastewater Treatment Directive. The subject project should also be seen in light of continued expansion of housing

development in Gorey which may see additional land use change from agricultural to built developments.

The loss of habitats can contribute to wider trends of biodiversity loss which arise not only from urban developments but also from agricultural practices. Hedgerows and linear woodlands suffer direct loss but also indirect loss from neglect and poor management. The loss of these habitats arising from the proposed development has been identified as negative-significant.

5.11 Avoidance, Remedial and Mitigation Measures

This report has identified four impacts that were assessed as 'significant negative'.

5.11.1 Mitigation Measures Proposed

The following mitigation measures are proposed for the development

Construction Phase

Mitigation 1: Loss of habitat – mitigation by compensation

Landscaping of the development has been designed to compensate for the loss of habitat arising from the removal of higher and lower significance hedgerows and earth banks. In total, 400m² of scrub, 790m of 'lower significance' earth bank/hedgerow and 1,043m of 'higher significance' hedgerow are to be removed. If it is assumed (conservatively) that the average width of linear habitat is 5m, then the total area of habitat to be lost is c.10,000m².

The landscape design includes c.12,957m² of new native woodland, 3,242m² of new wildflower meadows and 4,617m² of pocket parks. This include enhancement planting of earth banks and lower significance hedgerows to be retained (increasing their area as well as additional native planting). Meadow areas will be managed by cutting twice a year, once early in the season and again after flowers have seeded in the autumn. No herbicide sprays are to be used. These areas are shown in figure 5.

This gives a total of 20,8816m² of new habitat, or over twice the area of higher and lower significance habitat to be removed. Habitat compensation is not a precise science and new planting cannot fully compensate for the loss of old, biodiverse hedgerows. New planting will take time to achieve its biodiversity potential and will rely upon appropriate management during the operational phase. Nevertheless, the extent of compensation areas will reduce the magnitude of the negative effect arising from **habitat loss so that in the medium to long-term the impact will not be significant.**

5.6 Habitat Renewal



Figure 5-5. Habitat compensation areas

Additional habitat enhancement measures include the installation of Swift nesting boxes and bat boxes, the locations of which are given in figure 6.

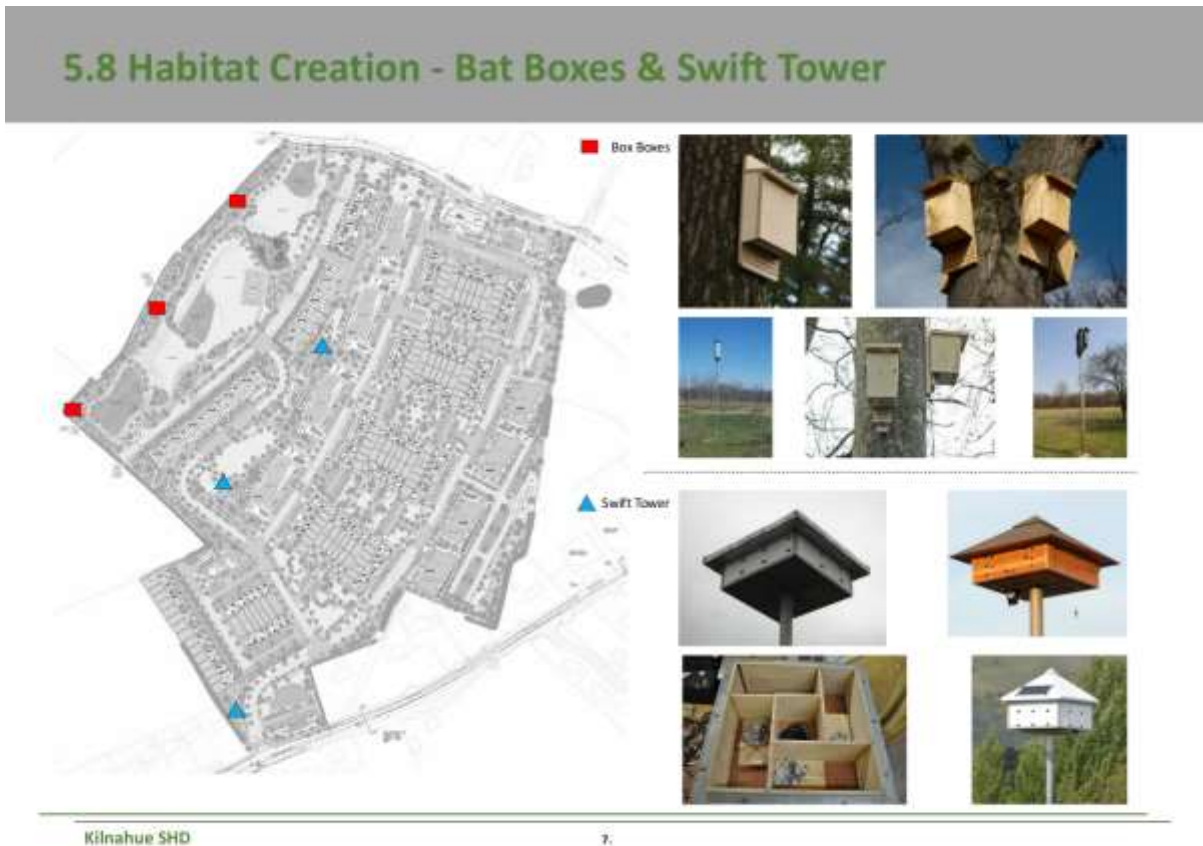


Figure 5-6. Locations of bat boxes and Swift nesting towers.

Mitigation 2: Disturbance of birds' nests – mitigation by avoidance

All birds' nests, eggs and young are protected by law. Trees and other vegetation should ideally be felled outside the nesting season (September to February). Where this is not possible, trees should be first inspected for nests. If no nest is present felling can proceed. If a nest is present then works can only proceed under licence from the National Parks and Wildlife Service.

Mitigation 3: Disturbance to bats – mitigation by avoidance

The following is taken from the bat and badger survey report:

Examination of all buildings prior to demolition

All buildings (the cottage, sheds, and other buildings) shall be examined by a bat specialist for the presence of bats prior to and during demolition. If bats are discovered, the structure is protected under the Wildlife Act as a bat roost and a derogation must be sought from NPWS for the exclusion of bats by a bat specialist and any additional required mitigation.

Checking of trees for bats

Following a tree assessment of the site, any trees with cavities shall be checked by a bat specialist prior to felling. If bats are present, a derogation shall be sought from NPWS and additional measures to mitigate the loss of a roost shall be implemented.

Examination of all lands for badgers prior to major clearance operations

The site shall be examined prior to clearance for the presence of badger setts.

Mitigation 4: Prevention of pollution – mitigation by avoidance

Construction will follow guidance from Inland Fisheries Ireland on the prevention of pollution during construction projects (2016). This will include the storage of dangerous substances in bunded areas and ensuring the silt-laden water does not run-off the site. Water will only be permitted to leave the site after passing thorough suitably-sized silt-traps. Pollution prevention measures will be maintained for the full duration of the construction project. The site manager will be responsible for the prevention of pollution. The following specific measures are included in the Preliminary Construction, Demolition and Waste Management Plan prepared for this planning application by Waterman Moylan. This includes the following specific pollution prevention measures:

- **Straw Bales:** Straw bales can be placed at the base of a slope to act as a sediment barrier. These are not recommended for use within a swale or channel. Straw bales are temporary in nature and may perform for only a period of weeks or months. Proper installation and maintenance is necessary to ensure their performance.
- **Silt Fencing:** A silt fence is made of a woven synthetic material, geotextile, and acts to filter run-off. Silt fencing can be placed as a temporary barrier along the contour at the base of a disturbed area, but is not recommended for use in a channel or swale. The material is durable and will last for more than one season if properly installed and maintained. Silt fencing is not intended to be used as a perimeter fence or in area of concentrated flow. If concentrated flow conditions exist, a more robust filter should be considered.
- **Silt Barriers:** Silt barriers can also be temporarily installed in any road gullies of partially constructed roads to prevent sediment movement into downstream drainage systems or SUDS components. When the catchment area is greater than that allowed for straw bale barriers or silt fences, runoff should be collected in diversion drains and routed through temporary sediment basins.
- **Diversion Drains:** Diversion drains are simple linear ditches, often with an earth bund, for channelling water to a desired location. If the drains are being eroded they can be lined with geotextile fabric or large stones or boulders.

Mitigation 5: Artificial lighting – mitigation my minimisation

The bat survey recommends that:

Lighting around the buildings shall be tightly controlled and ornamental lighting shall be avoided entirely. Lighting should respond to a motion trigger or be switched off at night after typical active hours (e.g., 11 pm to 6 am). Spotlights must not be introduced as these are hugely disruptive to most wildlife and cannot be targeted to the required area but create light pollution over a huge radius.

Further recommendations on lighting are given below:

- *Dark corridor for movement of bats through the site. Lighting shall be directed downwards away from the treetops.*
- *All luminaires shall lack UV elements when manufactured and shall be LED*
- *A warm white spectrum (ideally <2700 Kelvin) shall be adopted to reduce blue light component*
- *Luminaires shall feature peak wavelengths higher than 550 nm*
- *Planting shall provide areas of darkness suitable for bats and badgers to feed and commute through the site.*

Additional mitigation measures proposed in the bat report around planting and the preservation of feeding resources have been accounted for in the mitigation measures for habitat loss already discussed.

5.12 Predicted Impacts of the Proposed Development

This section allows for a qualitative description of the resultant positive and negative effects which the proposed development may have, assuming all mitigation measures are fully and successfully applied.

With the full implementation of all proposed mitigation measures then no significant negative effects to biodiversity will arise in the medium- to long-term. There will be short-term negative impact to biodiversity from habitat loss however this is not significant.

No other residual negative effects will arise from this development which are significant in magnitude.

5.13 Cumulative Impacts

Cumulative impacts can arise from this project through the additional loading to the Gorey wastewater treatment plant, the change of land use from tillage/agricultural to built surfaces and the loss of habitats. In this case there is sufficient treatment capacity at the wastewater treatment plant so that no negative effect to water quality in the receiving environment will arise (i.e. neutral impact). The conversion from tillage and the inclusion of standard SUDS measures will result in a positive effect to water quality from surface water run-off. Meanwhile, the loss of habitat was identified as a potentially significant negative effect to biodiversity and as a result substantial compensation areas are proposed so that the loss of this habitat in the medium- to long-term is not significant.

5.14 Monitoring

Monitoring is required where the potential impact of mitigation is uncertain or where significant residual impacts may arise despite mitigation. In this case no residual significant negative effects to biodiversity are predicted. Nevertheless, monitoring of pollution prevention measures will be required throughout the construction phase.

5.15 References

Bullock C., Kretch C. & Candon E. 2008. *The Economic and Social Aspects of Biodiversity*. Stationary Office.

Colhoun K. & Cummins S. 2013. *Birds of Conservation Concern in Ireland 2014 – 2019*. Irish Birds. Volume 9 Number 4 pg523-541.

Cooney R. & Dickson B. 2005. *Biodiversity and the Precautionary Principle*. Earthscan.

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

Council Directive 97/11/EEC of 3rd March 1997 amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment

Council Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy – more commonly known as the Water Framework Directive

Department of Arts, Heritage and the Gaeltacht. 2011. *Actions for Biodiversity 2011 – 2016. Ireland's National Biodiversity Plan*.

DG Environment. 2010. *Natura 2000 European Commission Nature and Biodiversity Newsletter*. Number 28. June 2010. ISSN: 1026-6151.

EPA. 2002. *Guidelines on the information to be contained in Environmental Impact Statements*.

EPA, 2003. *Advice Notes on Current Practice (in the preparation of Environmental Impact Statements)*

Fitter R., Fitter A. & Farrer A. 1984. *Grasses, sedges, rushes and ferns of Britain and Northern Europe*. Collins.

Fossitt J. 2000. *A Guide to Habitats in Ireland*. Heritage Council.

Foulkes N., Fuller J., Little D., McCourt S. & Murphy P. 2013. *Hedgerow Appraisal System - Best Practise Guidance on Hedgerow Survey, Data Collation and Appraisal*. Woodlands of Ireland, Dublin. Unpublished Report [pdf].

Harris S. & Yalden D.W. 2008. *Mammals of the British Isles: Handbook, 4th Edition*. The Mammal Society.

Hill M.O., Blackstock T.H., Long D.G. and Rothero G.P 2008. *A Checklist and Census Catalogue of British and Irish Bryophytes*. British Bryological Society.

Hundt L. 2012. *Bat Surveys: Good Practice Guidelines. 2nd Edition*. Bat Conservation Trust.

IEEM. 2016. *Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland*. Institute of Ecology and Environmental Management.

Inland Fisheries Ireland. 2016. *Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters*.

Institute of Environmental Assessment, 1995. *Guidelines for Baseline Ecological Assessment'*

- Johnson O. & More D.**, 2004. *Tree Guide'*, Collins
- Lysaght L. & Marnell F.** 2016. *Atlas of Mammals in Ireland 2010-2015*. National Biodiversity Data Centre.
- Mason C.F.** 1996. *Biology of Freshwater Pollution*. Longman.
- Morris P. & Therivel R.**, 2001. *Methods of Environmental Impact Assessment*, Spon Press
- NRA.** 2009. *Guidelines for Assessment of Ecological Impacts of National Road Schemes*. National Roads Authority.
- NPWS.** 2011. *Conservation Objectives Supporting Document. Dundalk Bay Special Protection Area. Version 1.*
- Parnell J. & Curtis T.** 2012. *Webb's An Irish Flora*. Cork University Press.
- Preston C.D., Pearman D.A. & Dines T.D.** 2002. *New Atlas of the British & Irish Flora*. Oxford University Press.
- Sargent G. & Morris P.** 2003. *How to Find & Identify Mammals*. The Mammal Society.
- Smith G. F., O'Donoghue P., O'Hora K. and Delaney E.** 2010. *Best Practice Guidance for Habitat Survey and Mapping*. Heritage Council.
- Stace C.** 2010. *New Flora of the British Isles*. Cambridge University Press
- Treweek J.**, 1999. *Ecological Impact Assessment'*, Blackwell Science.

6.0 LAND, SOIL, AND GEOLOGY

6.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) provides an assessment of the impact that the proposed residential development at a site off Kilnahue Lane, Gorey, Co. Wexford will have on the surrounding soil and geology in the vicinity of the site. It also sets out mitigation and remedial measures and methods of monitoring once the development is operational. It also sets out mitigation and remedial measures and methods of monitoring while the development is operational. A full description of the development can be found in Chapter 2 of this EIAR.

This chapter was completed by Waterman Moylan Consulting Engineers.

6.2 Assessment Methodology

A desktop study to classify the geological features related to the site was undertaken. Data from the Geological Survey of Ireland (GSI) was reviewed, including the following maps:

- Bedrock Geology Map
- Bedrock Aquifer Map
- Ground Water Vulnerability Map

This information was supplemented by a review of geotechnical Site Investigations carried out within the site by Site Investigations Ltd. in June 2021. This ground investigation assessed the soil, rock and groundwater conditions across the site and included trial pits with dynamic probes, soakaway tests and laboratory testing of representative soil samples.

6.3 Receiving Environment

The subject site is located at the west of Gorey, Co. Wexford, with access to the site at the north from Gorey Hill/Kilnahue Lane and at the south-west from Carnew Road (R725). The site is bounded by agricultural lands to the west, by Carnew Road (R725), residential properties and agricultural lands to the south and east, and by Gory Hill / Kilnahue Lane to the north.

The subject site is a greenfield site, currently used for agricultural purposes. Topographic survey data shows that the site falls generally from west to the east, from a high point of approximately 133.5m OD Malin at the west of the site to a low point of approximately 101.5m OD Malin at the east. There is a surface water ditch at approximately 97.50m OD Malin to the east of the site which drains the site to the Banogue River.

6.3.1 Desktop Study

Geological Survey Ireland (GSI) produces a wide range of datasets, including bedrock geology mapping, extracted in the Figure below:

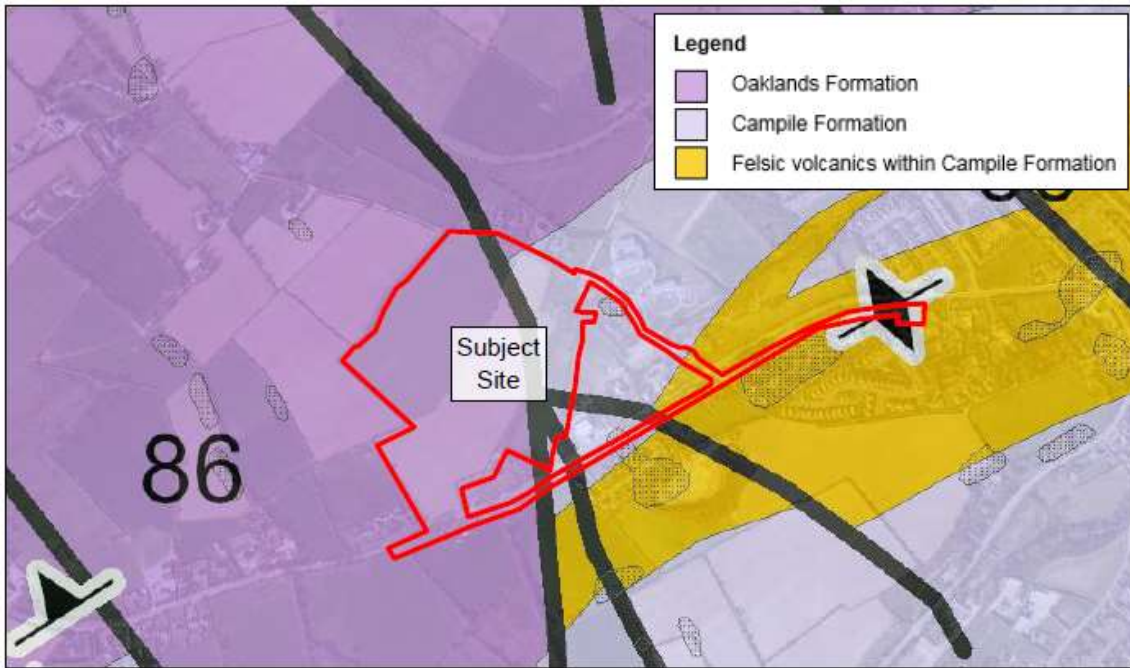


Figure 6-1. Extract from GSI Bedrock Geology Map

The bedrock geology map indicates that most of the site is within the Oaklands formation, with the eastern portion of the site falling within the Campile formation. The dominant lithology of the Oaklands formation is described as red-purple and green laminated and variegated siltstones and shales. It includes green greywackes, laminated dark-grey, green and buff-shales and fine siltstones, rare 'pinstripe' shales and silver-grey shales. The Campile formation is summarised as pale coloured rhyolites and rhyolitic tuffs or agglomerates in grey and brown slaty mudstones with occasional andesitic tuffs or agglomerates. Some of the upgrades works required by Irish Water are within an area of felsic volcanics within the Campile formation. The National Aquifer Bedrock Map prepared by the Geological Survey of Ireland was consulted and is extracted below:

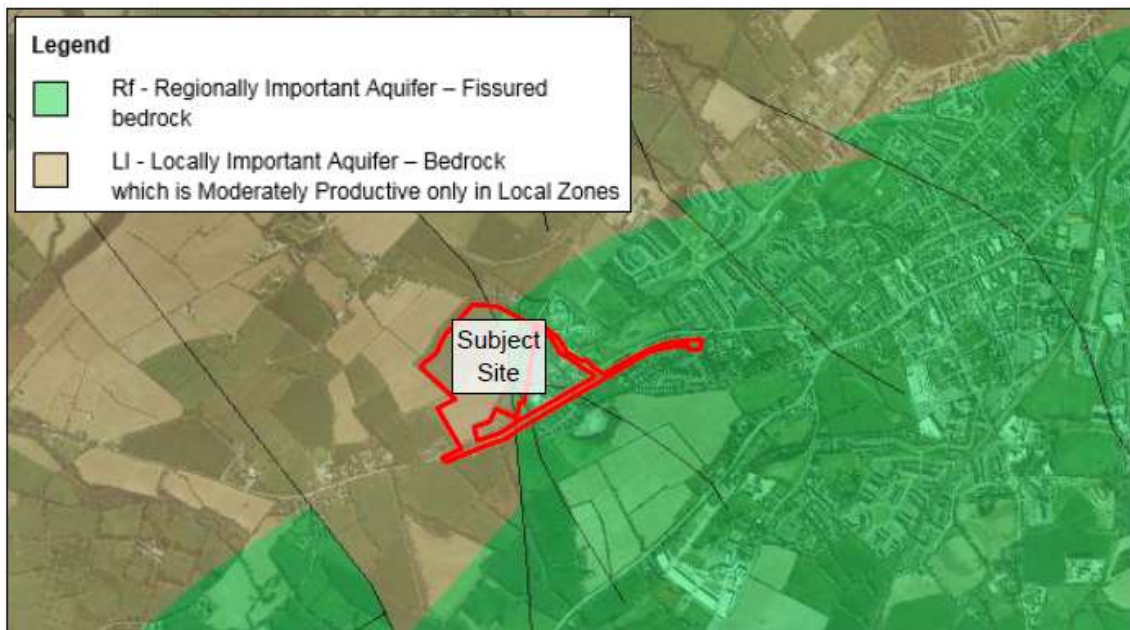


Figure 6-2. Extract from GSI Groundwater Aquifer Map

From this map, the majority of the site is within the designation LI, which represents locally important moderately productive aquifer. The eastern portion of the site, including the proposed upgrades works within Gorey town, are within the designation Rf, which represents regionally important aquifer with fissured bedrock.

From the GSI groundwater vulnerability map, extracted below, rock is at or near the surface, or there is Karst topography, at the north-west portion of the site, while the remainder of the site has high or extreme groundwater vulnerability.

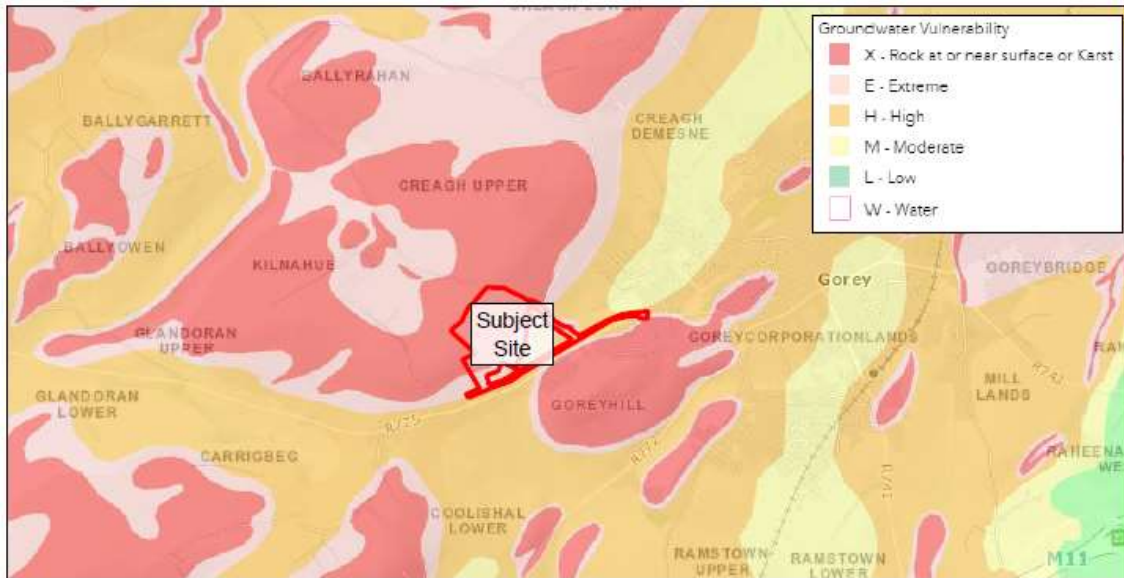


Figure 6-3. Groundwater Vulnerability Map

6.3.2 Ground Investigations

Intrusive ground investigations were carried out at the site by Site Investigations Ltd. in June 2021. The scope of the site investigation works carried out at the site comprised the following:

- 8 No. trial pits were excavated using a wheeled excavator. The pits were logged and photographed by a Site Investigations Ltd. geotechnical engineer and representative disturbed bulk samples were recovered as the pits were excavated. The trial pits were backfilled with the arisings immediately upon completion.
- 8 No. Dynamic probes were completed adjacent to the trial pits using a track mounted Competitor 130 machine. At each location, undisturbed cylindrical mould samples were recovered to complete California Bearing Ratio tests in the laboratory.
- 8 No. Soakaway Tests were completed and logged adjacent to the trial pits.
- Laboratory Testing was carried out, comprising of the following:
 - 8 No. moisture contents
 - 8 No. Atterberg limits
 - 8 No. particle size distribution curves
 - 8 No. pH, chloride and sulphate content
 - 8 No. Suite I analysis
 - 8 No. loss on ignition

The locations of the trial pits are indicated on the Figure below: -



Figure 6-4. Site Investigation Locations

The site investigations found that natural ground conditions vary slightly across the site. The area to the south-east of the site, at TP04, TP05, TP07 and TP08, is dominated by cohesive light brown slightly sandy slightly gravelly silty clay with high cobble and low boulder content soils. The remaining trial pits, TP01, TP02, TP03 and TP06, are dominated by dark grey silty sandy gravel with high cobble and boulder content.

The dynamic probe results generally recorded values of 4 or greater at 1.00mbgl and the values then increase steadily with depth. The value of 4 indicates an allowable bearing capacity of 100kN/m². Using the same value for the cohesive clay soils indicates an allowable bearing capacity of 160kN/m². The CBR test results indicate values ranging from 1.2% to 6.2%.

No groundwater was recorded entering into the trial pits during the fieldworks period. There is always considerable uncertainty as to the likely rates of water ingress into excavations in cohesive soil sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water. Therefore, based on this information at the exploratory hole locations to date, it is considered likely that any shallow ingress into natural ground excavations will be slow to medium. The permeability of the soils varies across the site depending on the soils encountered. The soakaway tests completed at clay-dominated parts of the site, TP04, TP05, TP07 and TP08, recorded no infiltration. The unsuitability of the soils for soakaways is further suggested by the soil descriptions of the materials in this area of the site where the soakaway was completed, i.e., well compacted clay/silt soils.

The tests attempted at TP01, TP02, TP03 and TP06, encountered granular gravel soils and these pits drained faster than it was possible to fill the pits. A full water bowser (1,000 litres) was added to the pit following excavations and the water did not remain in the pit sufficiently long enough to measure the infiltration rates. Any planned soakaways should be located in these granular gravel soils.

Environmental testing was carried out on eight samples. Suite I testing was carried out to determine if the material is hazardous or non-hazardous, to determine whether the material on the site could be accepted as 'inert material' by an Irish landfill. The Waste Classification report shows that the material tested can be classified as non-hazardous material and that the soils tested would be able to be treated as Inert Waste. Eight samples were tested but it cannot be discounted that any localised contamination may have been missed. Any made ground excavated on site should be stockpiled separately to natural soils to avoid any potential cross contamination of the soils.

The chemical test results indicate a general pH value between 7.91 and 8.55, which is close to neutral and below the level of 9, therefore no special precautions are required. The maximum value obtained for water soluble sulphate was 127mg/l as SO₃. After conversion to SO₄ (SO₄ = SO₃ x 1.2), the maximum value of 152mg/l shows Class 1 conditions and no special precautions are required.

The full Site Investigation report is included in Appendix 6.1 of this EIAR.

6.4 Characteristics of the Proposed Development

The proposed development consists of a total of 421 residential units, comprising of 133 houses, 228 apartment units and 60 duplex units, a crèche, two retail units and two community rooms. The schedule of accommodation is set out in the Table below:

Table 6-1. Schedule of Accommodation

Description	1-bed	2-bed	3-bed	4-bed	Total
Houses	-	-	115	18	133
Apartments	76	145	7	-	228
Duplexes	4	26	30	-	60
Creches	565 sqm				-
Community Building (2 no. Retail Units and 2 no. Community Rooms)	361 sqm				-
Total	80	171	152	18	421

The development includes all associated site works, boundary treatments, drainage and service connections. The proposed development, with respect to soils and geology, includes the following characteristics:-

- Stripping of topsoil.
- Excavation of foundations.
- Excavation of drainage sewers and utilities.
- Regrading and landscaping.
- Disposal of any surplus excavated soils including any contaminated material.

6.5 Potential Impacts

6.5.1 Construction Stage

The removal of topsoil during earthworks and the construction of roads, services and buildings, in particular basements and foundations, will expose subsoil to weathering and may result in the erosion of soils during adverse weather conditions. Surface water runoff from the surface of the excavated areas may result in silt discharges to the Banogue River.

Excavations for foundations, roadworks and services will result in a surplus of subsoil. Surplus subsoil will be used in fill areas where applicable.

Dust from the site and from soil spillages on the existing road network around the site may be problematic, especially during dry conditions.

Accidental oil or diesel spillages from construction plant and equipment, in particular at refuelling areas, may result in oil contamination of the soils and underlying geological structures.

6.5.2 Operational Stage

During the operational stage of the development it is not envisaged that there will be any ongoing impacts on the underlying soil as a result of the proposed development. Any hydro-geological impacts are temporary and associated with the construction of the proposed development.

6.5.3 Do-Nothing Impact

There is no impact on the soils and geology in the do-nothing scenario.

6.6 Mitigation Measures

6.6.1 Construction Stage

To reduce the quantity of soil to be removed from or imported into the site, the floor levels of the proposed buildings and roads are designed to match existing levels as closely as is feasible, to minimise the cut and fill balance. The number of vehicle movements offsite will be minimised by this optimisation.

Surplus subsoil and rock that may be required to be removed from site will be deposited in approved fill areas or to an approved waste disposal facility. Surplus subsoil will be stockpiled on site, in such a manner as to avoid contamination with builders' waste materials, etc., and so as to preserve the

materials for future use as clean fill. A Construction Management Plan will need to include protocols for soil removal and should be implemented by the development's main contractor during the construction stage.

Soil samples taken from the site during the site investigations showed no evidence of contamination. However, any contaminated soils that are encountered during the works will be excavated and disposed of off-site in accordance with the Waste Management Acts, 1998-2006, and associated regulations and guidance provided in Guidelines for the Management of Waste from National Road Construction Projects published by the National Roads Authority in 2008.

In the case of topsoil, careful planning and on-site storage can ensure that this resource is reused on-site as much as possible. Any surplus of soil not reused on site can be sold. However, topsoil is quite sensitive and can be rendered useless if not stored and cared for properly. It is therefore important that topsoil is kept completely separate from all other construction waste, as any cross-contamination of the topsoil can render it useless for reuse.

It is important to ensure that topsoil is protected from all kinds of vehicle damage and kept away from site-track, delivery vehicle turning areas and site plant and vehicle storage areas.

If topsoil is stored in piles of greater than two metres in height, the soil matrix (internal structure) can be damaged beyond repair. It should also be kept as dry as possible and used as soon as possible to reduce any deterioration through lengthy storage and excess moving around the site.

Records of topsoil storage, movements and transfer from site will be kept by the C&D Waste Manager.

The provision of wheel wash facilities at the construction entrances to the development will minimise the amount of soils deposited on the surrounding road network. The adjoining road network will be cleaned on a regular basis, as required, to prevent the build-up of soils from the development site on the existing public roads. Dampening down measures with water sprays will be implemented during periods of dry weather to reduce dust levels arising from the development works.

Measures will be implemented throughout the construction stage to prevent contamination of the soil and adjacent watercourses from oil and petrol leakages. Suitable bunded areas will be installed for oil and petrol storage tanks. Designated fuel filling points will be put in place with appropriate oil and petrol interceptors to provide protection from accidental spills. Refuelling will be restricted to these allocated re-fuelling areas. This area is to be an impermeable bunded area designed to contain 110% of the volume of fuel stored.

During excavation works, temporary sumps will be used to collect any surface water run-off thereby avoiding of standing water within the excavations. If groundwater is encountered during excavations, mechanical pumps will be required to remove the groundwater from sumps. Sumps should be carefully located and constructed to ensure that groundwater is efficiently removed from excavations and trenches.

Silt traps, silt fences and tailing ponds will need to be provided by the contractor where necessary to prevent silts and soils being washed away by heavy rains during the course of the construction stage. Surface water runoff and water pumped from the excavation works will be discharged via a silt trap /

settlement pond to the existing foul drainage network. Straw bales will be used at the outfall to filter surface water to remove contaminants.

Appropriate storage and bunding measures will be implemented throughout the construction stage to prevent contamination of the soil and groundwater from oil and petrol leakage from site plant. Refuelling will be restricted to allocated re-fuelling areas. This area is to be an impermeable bunded area designed to contain 110% of the volume of fuel stored.

After implementation of the above measures, the proposed development will not give rise to any significant long term adverse impact. Moderate negative impacts during the construction stage will be short term only in duration.

A Construction Management Plan, Traffic Management Plan and Waste Management Plan will be implemented by the contractor during the construction stage to control the above remedial measures.

6.6.2 Operational Stage

On completion of the construction phase and following replacement of topsoil, a planting programme will commence to prevent soil erosion. SuDS and filtration devices are proposed to be provided as part of the development. These will help to remove pollutants from rainwater runoff. The SuDS proposals will also encourage infiltration of surface water to the ground.

6.7 Residual Impact

6.7.1 Construction Stage

With the protective measures noted above in place during excavation works, any potential impacts on soils and geology in the area will not have significant adverse impacts, and no significant adverse impacts on the soils and geology of the subject lands are envisaged.

6.7.2 Operational Stage

On completion of the construction phase and following replacement of topsoil and implementation of a planting programme, no further impacts on the soil are envisaged. SuDS measures, including permeable paving, bioretention tree pits and open areas with low level planting, will assist with treating surface water runoff while replenishing the natural ground water table. No significant adverse impacts are predicted on soils or geology.

6.7.3 Worst Case Impact

The worst case scenario would be for contaminated soils to be encountered during the works. As noted above, any contaminated soils encountered will be excavated and disposed of off-site in accordance with the Waste Management Acts, 1998-2006, and associated regulations and guidance provided in Guidelines for the Management of Waste from National Road Construction Projects published by the National Roads Authority in 2008.

In the worst-case scenario, subsoil may be exposed to inclement weather during construction and may result in the erosion of soils. However, with the proposed mitigation measures the quantity of soils exposed and the duration of that exposure will be minimised.

6.8 Monitoring

6.8.1 Construction Stage

Monitoring during the construction phase is recommended, in particular in relation to the following:

- Adequate protection of topsoil stockpiled for reuse.
- Adequate protection from contamination of soils for removal.
- Monitoring of surface water discharging to existing watercourses, ditches and the existing surface water drainage system.
- Monitoring cleanliness of the adjoining road network.
- Monitoring measures for prevention of oil and petrol spillages.
- Dust control by dampening down measures close to the boundaries of the site, when required due to unusually dry weather conditions.

6.8.2 Operational Stage

During the operational phase, the surface water network (drains, gullies, manholes, AJs, SuDS devices, attenuation system) will need to be regularly maintained and where required cleaned out. A suitable maintenance regime of inspecting and cleaning should be incorporated into the safety file/maintenance manual for the development.

6.9 Reinstatement

Excavations and trenches opened during construction will be backfilled with subsoil to reinstate existing ground levels. Upon completion no impact is foreseen.

6.10 Difficulties Encountered

There were no difficulties encountered when undertaking this assessment.

7.0 WATER

7.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) provides an assessment of the impact that the proposed residential development at a site off Kilnahue Lane, Gorey, Co. Wexford will have on the network of water (water supply, foul drainage, surface water) in the vicinity of the site. It also sets out mitigation and remedial measures and methods of monitoring while the development is operational. A full description of the development can be found in Chapter 2 of this EIAR. This chapter was completed by Waterman Moylan Consulting Engineers.

7.2 Assessment Methodology

7.2.1 Water Supply

Research for this section included a review of the existing watermain layout from Irish Water / Wexford County Council records for the area.

7.2.2 Foul Water Drainage

Research for this section included a review of the existing foul water layout from Irish Water / Wexford County Council records for the area.

7.2.3 Surface Water Drainage

Research for this section included a review of Ordnance Survey and Topographical surveys of the subject site and surrounding area and a review of the existing surface water layout from Irish Water / Wexford County Council records for the area.

7.3 Receiving Environment

7.3.1 Water Supply

There is an existing 100mm watermain in Gorey Hill/Kilnahue Lane, serving the school on the northern side of the road, and there is a 4" (c.100mm) watermain in Carnew Road.

7.3.2 Foul Water Drainage

There is an existing 150mm diameter public foul water sewer in Carnew Road, south-east of the site. This sewer increases in diameter to 225mm approximately 800m east of the site entrance, at Westhill Park.

There is a 225mm diameter foul sewer draining eastwards from Creagh College, which drains eastwards along Creagh College Lane, (a new 2m wide pedestrian access along the southern boundary of Gaelscoil Moshíológ), connecting Kilnahue Lane to the Creagh College roundabout.

7.3.3 Surface Water Drainage

The proposed development site is a greenfield site. Topographic survey data shows that the site falls generally from west to the east, from a high point of approximately 133.5m at the west of the site to a low point of approximately 101.5m at the east. There is a surface water ditch at the eastern

boundary of the site, at approximately 97.50m OD Malin. This ditch drains in a northerly direction, discharging to the Banogue River.

7.4 Characteristics of Proposed Development

7.4.1 General

A full description of the development can be found in Chapter 2 of this EIAR. The following is a broad outline of the development: -

The proposed development consists of a total of 421 residential units, comprising of 133 houses, 228 apartment units and 60 duplex units, a crèche, two retail units and two community rooms. The schedule of accommodation is set out in the Table below:

Table 7-1. Schedule of Accommodation

Description	1-bed	2-bed	3-bed	4-bed	Total
Houses	-	-	115	18	133
Apartments	76	145	7	-	228
Duplexes	4	26	30	-	60
Creches	565 sqm				-
Community Building (2 no. Retail Units and 2 no. Community Rooms)	361 sqm				-
Total	80	171	152	18	421

7.4.2 Water Supply

It is proposed to provide two new connections to the existing public network, one to the existing watermain in Carnew Road and the other to the existing watermain in Gorey Hill/Kilnahue Lane.

A pre-connection enquiry for the development was submitted to Irish Water in February 2021, with a Confirmation of Feasibility Letter issued at the end of August 2021. The letter stipulates that some watermain upgrades are required to facilitate the development.

As such, some off-site watermain upgrades are proposed in accordance with the requirements set out by Irish Water in the Confirmation of Feasibility Letter. These upgrades involve laying a new 150mm main from the Kilnahue Lane access to Ardmore water pumping station on Carnew Road, continuing as far as the 200mm main crossing just east of the pumping station. Additionally, a new booster station is to be included in the development site.

The calculated water demand at the subject development is set out in the below table. The average domestic demand has been established based on an average occupancy ratio of 2.7 persons per dwelling with a daily domestic per capita consumption of 150 litres per head per day and with a 10% allowance factor. Note that the Irish Water Code of Practice assumes 2.7 residents per unit regardless of the unit type.

The average day/peak week demand has been taken as 1.25 times the average daily domestic demand, while the peak demand has been taken as 5 times the average day/peak week demand, as per Section 3.7.2 of the Irish Water Code of Practice for Water Infrastructure.

Table 7-2. Calculation of Water Demand for the Development

Description	Total Population No. People	Demand per Capita l/hd/day	Water Demand l/day	Average Demand l/s	Average Peak Demand l/s	Peak Demand l/s
133 Houses	359 Residents	150	53,850	0.623	0.779	3.740
228 Apartments	616 Residents	150	92,400	1.069	1.337	6.417
60 Duplexes	162 Residents	150	24,300	0.281	0.352	1.688
Crèche	89 Children	50	4,450	0.052	0.064	0.309
	11 Staff	45	1,170	0.014	0.017	0.081
Retail	25 Customers	50	1,250	0.014	0.018	0.087

Based on these figures, the water demand that will be generated by the development is approximately 2.058 l/s, or 178m³ per day.

7.4.3 Foul Water Drainage

The majority of the site will drain foul water in a north-easterly direction, via a series of 150mm and 225mm sewers, towards Gorey Hill/Kilnahue Lane. From there, a new wastewater sewer will be laid discharging in a south-easterly direction towards Carnew Road and continuing in a north-easterly direction along Carnew Road, discharging via a new connection to the existing 225mm sewer at Ardmore Water Boosting Station.

The entrance apartment building at the south of the site will discharge directly to the existing 150mm foul water sewer in Carnew Road. This apartment building is proposed to include 10 No. residential units.

The sewer in Carnew Road continues through to the Main Street of Gorey, and onto Esmonde Street, ultimately discharging to the Courtown Wastewater Treatment Plant. Irish Water have confirmed that the Courtown Wastewater Treatment Plant has capacity to cater for the proposed development.

A pre-connection enquiry for the development was submitted to Irish Water in February 2021 and a Confirmation of Feasibility Letter was issued by Irish Water in August 2021. This letter notes that to facilitate the proposed development, off-site foul sewer upgrades are required on Main Street and Esmonde Street in Gorey town. The required upgrades involve upgrading approximately 550m of 225mm diameter sewer to 375mm diameter.

The calculated foul water flows at the subject development are set out in the Table below. Domestic wastewater loads have been calculated based on 2.7 persons per unit with a per capita wastewater flow of 150 litres per head per day along with a 10% unit consumption allowance, in line with Section 3.6 of the Irish Water Code of Practice for Wastewater Infrastructure. Note that the Irish Water Code of Practice assumes 2.7 residents per unit regardless of the unit type.

Per capita wastewater flows for the commercial area (the crèche/childcare facility) have been based on the flow rates set out in Appendix C of the Code of Practice, and a peak flow multiplier of 6 has been used, as per Section 2.2.5 of Appendix B of the Code of Practice.

Table 7-3. Calculation of Total Foul Water Flow from the Development

Description	Total Population No. People	Load per Capita l/hd/day	Daily Load l/day	Total DWF l/s	Peak Flow l/s
133 Houses	359 Residents	150	53,850	0.623	3.740
228 Apartments	616 Residents	150	92,400	1.069	6.417
60 Duplexes	162 Residents	150	24,300	0.281	1.688
Crèche	89 Children	50	4,450	0.052	0.309
	11 Staff	45	1,170	0.014	0.081
Retail & Community	25 Customers	50	1,250	0.014	0.087
	8 Staff	45	360	0.004	0.025
Total	-	-	177,780	2.058	12.346

The total dry weather flow from the development is 2.058 l/s, with a peak flow of 12.346 l/s.

7.4.4 Surface Water Drainage

It is proposed to drain surface water through the site via a series of sewers, ranging in size from 225mm diameter to 450mm diameter. As with the foul water drainage, the majority of the site will form one catchment, with the entrance apartment block at the south of the site forming a second catchment.

The proposed development has been designed to incorporate best drainage practice, including a Storm Water Management Plan through the use of various SuDS techniques to treat and minimise surface water runoff from the site. The methodology involved in developing a Storm Water Management Plan for the subject site is based on recommendations set out in the Greater Dublin Strategic Drainage Study (GSDSDS) and in the SuDS Manual (Ciria C753). Treatment and storage of surface water at source will intercept and slow down the rate of runoff from the site to the existing surface water sewer system.

Based on three key elements, Water Quantity, Water Quality and Amenity, the targets of the SuDS train concept have been implemented in the design, providing SuDS devices for Source Control, Site Control and Regional Control.

Proposed source control devices include permeable paving in private parking spaces and courtyard areas. Permeable paving helps to control stormwater at the source to reduce runoff, and it has the dual benefit of improving water quality by trapping suspended solids and filtering pollutants in the substrata layers. Green roofing is proposed at apartment blocks. The substrate and the plant layers in a green roof absorb large amounts of rainwater and release it back into the atmosphere by transpiration and evaporation. They also filter water as it passes through the layers, so the run-off, when it is produced, has fewer pollutants. Rainfall not retained by green roofs is detained, effectively increasing the time to peak and slowing peak flows. Open grassed areas with low level planting are proposed in various open spaces throughout the site, which will act as soft scape and will significantly slow down and reduce the amount of surface water runoff from the open spaces.

A high number of Bioretention Tree Pits are proposed, to serve as a site control measure. Trees can help control storm water runoff because their leaves, stems, and roots slow rain from reaching the ground and capture and store rainfall to be released later. Trees help to attenuate flows, trap silts and pollutants, promote infiltration and prevent erosion. Incorporating tree planting offers multiple benefits, including attractive planting features, improved air quality and increased

biodiversity whilst helping to ensure adaptation to climate change. It is also proposed to provide a soakaway pit at the entrance apartment building at the south of the site as another site control measure. Soakaway pits can help control and treat storm water runoff by trapping silts and pollutants and promoting infiltration.

Attenuation for the main site is to be provided in an online underground tank at the east of the site. This tank is sized to accommodate the 1-in-100 year storm, accounting for a 20% increase due to climate change. Surface water from the site will be directed to this attenuation tank, from where it will discharge via a manhole with a Hydrobrake or similar approved flow control device limited to the greenfield equivalent runoff rate. From here, surface water will discharge in a northerly direction towards Gorey Hill/Kilnahue Lane and then in a south-easterly direction along Gorey Hill, outfalling via a new headwall to the existing ditch/stream.

7.5 Potential Impacts

7.5.1 Water Supply

Construction Stage:

The site is currently a greenfield with no water supply. Site offices and construction activities will create a demand for water supply to the site. Commencement of construction will therefore result in a net increase in the water demand for the site. There is a risk of contamination to the existing water supply during connection to the public water supply.

Operational Stage:

During the operational stage of the development, there will be a demand for water from the public water supply, whereas in the do-nothing scenario there is no water demand for the site.

7.5.2 Foul Water Drainage

Construction Stage:

During the construction of the new foul sewers there is the potential for surface water to be discharged to the existing public foul sewer system due to pipes and manholes being left open. There is a risk of pollution of groundwater and water courses by accidental spillage of foul effluent during connections being made to live sewers.

Operational Stage:

There will be a peak foul water flow of 6.111 l/s discharging to the foul water system serving the site, compared to the do-nothing scenario where there is no connection in place. The proposal will result in a net increase in flows to the network.

There is a possibility of some surface water ingress into the foul water drainage system due to poor workmanship. There is also a possibility of leakage from sewers and drains within the site and along the route to the outfall sewer. Any foul water leakage would result in local contamination of soil and ground waters in the area.

7.5.3 Surface Water Drainage

Construction Stage:

Surface water currently flows to the existing ditch at the east of the site, discharging to the Banogue River. There is a possibility of temporary contamination to the surface water network during construction activities. Sedimentation and silt arising from construction activities could contaminate the surface water network. Refuelling of vehicles may result in spillages, which could impact local surface water bodies.

A Hydrological Assessment was prepared by Dr. Pamela Bartley and is included with this submission. It takes account of all SuDS proposals and confirms that with current methods, tillage lands that are turned into residential invariably end up improving water quality of runoff.

Operational Stage:

The proposed flow control device is to be limited to the greenfield equivalent runoff rate. The net runoff volume from the site will therefore remain unchanged. There is a possibility of some foul water ingress into the surface water drainage system due to poor workmanship. Any such cross connections could result in pollution of the surface water network.

The runoff from the roads and hardstanding areas will discharge contaminants, including oils and silts, to the surface water system which might result in pollution to the surface water network.

7.6 Mitigation Measures (Ameliorative, Remedial or Reductive Measures)

7.6.1 Water Supply

Construction Stage:

A method statement setting out in detail the procedures to be used when working in the vicinity of existing watermains will be produced by the contractor for any construction works within the vicinity of watermains and for roads or services crossing watermains.

All watermains will be cleaned and tested in accordance with Irish Water guidelines prior to connection to the public watermain. All connections to the public watermain will be carried out by, or under the supervision of, Irish Water.

Potential negative impacts during construction stage will be short term only.

Operational Stage:

Water meters will be installed at connection points, with locations to be agreed and approved by Irish Water, and these meters will be linked to Irish Water's monitoring system by telemetry. These meters will facilitate the early detection of unusual water usage in the network and identify potential leaks in the system.

All plumbing fixtures and fittings and sanitary wear to be installed within the development should be to the current best practice for water consumption to minimise future water usage.

It is not envisaged that any further remedial or reductive measures will be necessary on completion.

7.6.2 Foul Water Drainage

Construction Stage:

In order to reduce the risk of defective or leaking foul sewers, the following remedial measures will be implemented: -

- All new foul sewers will be tested by means of an approved air test during the construction stage in accordance with Irish Waters Code of Practice and Standard Details.
- All private drainage will be inspected and signed off by the design Engineer in accordance with the Building Regulations Part H and BCAR requirements.
- Foul sewers will be surveyed by CCTV to identify possible physical defects.
- The connection of the new foul sewers to the public sewer will be carried out under the supervision of Irish Water and will be checked prior to commissioning.
- Prior to commencement of excavations in public areas, all utilities and public services will be identified and checked, to ensure that adequate protection measures are implemented during the construction stage.

Operational Stage:

All foul drains will be tested and surveyed prior to connection to the public sewers to minimise the risk of uncontrolled ground water penetration or leakage of the foul water to ground water on the site.

Otherwise, no remedial or reductive measures are deemed to be necessary after completion of the proposed development, other than normal maintenance of the foul sewer system.

7.6.3 Surface Water Drainage

Construction Stage:

The contractor will prepare and implement a Construction Management Plan which will outline the requirements for the storage and handling of fuel, including the refuelling of vehicles in designated refuelling zones to minimise the risk of spillages, and the impact of spillages should they occur.

The Construction Management Plan will also utilise sedimentation controls, including silt traps, tailings ponds and silt fences during the construction period.

All private drainage will be inspected and signed off by the design Engineer in accordance with the Building Regulations Part H and Building Control (Amendment) Regulations (BCAR) requirements. This will reduce the possibility of any cross connections being constructed.

Operational Stage:

The proposed flow control device is to be limited to the greenfield equivalent runoff rate. The net runoff volume from the site will therefore remain unchanged. There is a possibility of some foul water ingress into the surface water drainage system due to poor workmanship. Any such cross connections could result in pollution of the surface water network.

Surface water will be attenuated privately and will discharge to the public network at a controlled rate limited to the greenfield equivalent runoff rate.

In addition, the SuDS devices outlined in Section 8.4.4 will reduce and slow down the rate of surface water runoff from the site. This will minimise peak flows in the downstream system during major storm events. Gullies and the flow control devices shall be regularly maintained to avoid blockages.

The SuDS treatment train will also treat the surface water discharging to the public network, removing pollutants from the surface water runoff. Maintenance of these SuDS devices will be required to ensure that they continue to treat the surface water as designed.

7.7 Residual Impacts

7.7.1 Water Supply

Construction Stage:

Due to the proposed remedial measures outlined above, no significant adverse impacts are expected to arise on the water supply network during the construction stage of the development.

Operational Stage:

There will be a water demand for the implementation of the development of approximately 176m³ per day. Irish Water have confirmed that the existing network has sufficient capacity, subject to upgrade works as specified in Section 8.4.2.

7.7.2 Foul Water Drainage

Construction Stage:

During the construction stage of the development, some short term negative impacts may result as identified above. However, if the proposed remedial and reductive measures are implemented, the impact of the implementation of the development during the construction stage will be minimised and no significant long term impacts will result from the construction works.

Operational Stage:

Wastewater will discharge from the completed and occupied development at a rate of approximately 176m³ per day. Irish Water have confirmed that the existing network has sufficient capacity to cater for the development, subject to upgrade works as specified in Section 8.4.3.

7.7.3 Surface Water Drainage

Construction Stage:

During the construction stage, some short term negative impacts may result, as identified above. However, if the proposed remedial and reductive measures are implemented, the impact of the implementation of the development during the construction stage will be minimised and no significant long term impacts will result from the construction works.

Operational Stage:

By introducing flow control measures and appropriately sized attenuation, the surface water runoff rate from the site will remain unchanged from the current scenario. Introduction of appropriate interception and treatment SuDS devices will ensure that a high runoff water quality is maintained. No significant adverse impacts are envisaged.

7.7.4 Worst Case Impact

In the worst case scenario, there could be some surface water ingress into the foul water drainage system due to poor workmanship. Leakage from sewers and drains could result in local contamination of soil and ground waters in the area. The runoff from the roads and hardstanding areas will discharge contaminants, including oils and silts, to the surface water system which might result in polluting of the surface water network. However, with the mitigation measures set out above, the likelihood of these impacts will be minimised, and no significant long term impacts will result from the development.

7.8 Monitoring**7.8.1 Water Supply**

Water usage and potential leakage will be monitored by Irish Water using the water meters which will be installed on the supply pipes so that the development can be monitored in sections. The location of these meters will be agreed with Irish Water and the meters will be linked to Irish Water's monitoring system via telemetry.

7.8.2 Foul Water Drainage

Following completion of construction of the development there are no monitoring requirements envisaged other than normal monitoring and maintenance of the wastewater system by Irish Water.

7.8.3 Surface Water Drainage

The surface water network (drains, gullies, manholes, AJs, SuDS devices, attenuation system) will need to be regularly maintained and where required cleaned out. A suitable maintenance regime of inspecting and cleaning shall be incorporated into the safety file/maintenance manual for the development.

7.9 Reinstatement

Any existing roads and footpaths that are opened to facilitate water supply, foul water drainage and surface water drainage connections will be reinstated.

7.10 Difficulties Encountered

There were no difficulties encountered when undertaking this assessment.

8.0 AIR QUALITY

8.1 Introduction

Chapter 8 of this Environmental Impact Assessment has been prepared by DKP Environmental (DKPEV) and assesses the air quality impacts associated with the proposed development at Kilnahue lands, Gorey, Co. Wexford. The proposed residential development consists of residential housing units, duplex and apartment blocks, a childcare facility, and two retail units and two community rooms. This chapter describes the existing ambient air quality around the development area and examines the impact of the proposed development during the construction phase and operational phase and considers the air quality status for future residents at the proposed development. Emissions impacting air quality for the main traffic-derived pollutants (nitrogen dioxide and particulate matter) have been predicted using the screening air quality assessment from the U.K Highway Agency Design Manual for Roads and Bridges (DMRB). The assessment also includes recommended mitigation measures to control and minimise the impact that the development may have on local air quality. This assessment has been prepared in accordance with the EIA Directive 2014/52/EC and current Environmental Protection Agency (EPA) guidelines. This section should be read in conjunction with the site layout plans and project description sections of this EIAR.

8.2 Research Methodology

Research for this section included a review of the Air Quality Standards Regulations (S.I. 180 of 2011) and the EPA annual reports on air quality in Ireland. The most current EPA report - 2019 Annual Report on Air Quality in Ireland has been examined in order to assess the existing air quality conditions and to provide information on background concentrations. Predicted air quality emissions for the main traffic-derived pollutants have been modelled using the screening air quality assessment from the U.K Highway Agency Design Manual for Roads and Bridges (DMRB) and data from the transport Assessment undertaken for the residential development at Kilnahue.

8.2.1 Legislation and Guidelines

The Clean Air for Europe (CAFE) programme revisited the management of Air Quality within the EU and replaced the EU Framework Directive 96/62/EC with the Ambient Air Quality and Cleaner Air for Europe Directive 2008/50/EC. This Directive is currently transposed into Irish legislation by the Air Quality Standards Regulations 2011. These limit values are binding in Ireland and have been set with the aim of protecting health. In addition, the following legislation and guidance were reviewed:

- National Roads Authority (2011), Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes;
- Environmental Impacts Assessment Directive 2011/92/EU as amended by Directive 2014/52/EU;
- Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, DRAFT August 2017);
- IAQM Land-Use Planning & Development Control: Planning for Air Quality; and,
- IAQM Guidance on the assessment of dust from demolition and construction.

8.2.2 Air Quality Standards Regulations Overview

To reduce the risk of poor air quality impacts, National and European statutory bodies have set limit values in ambient air for a range of air pollutants. EU directives set baseline standards for monitoring air quality and reducing emissions in Ireland. These limits are for the protection of human health and are presented in Table 8.1. Air quality significance criteria are assessed on the basis of compliance with the standards.

Table 8-1. Air quality standards regulations (S.I.180)

Pollutant	Limit value objective	Averaging period	Value limit ($\mu\text{g}/\text{m}^3$)
Nitrogen Dioxide (NO_2)	Protection of human health	calendar year	40
		1 hour	200
Benzene	Protection of human health	calendar year	5
Carbon Monoxide (CO)	Protection of human health	calendar year	10,000
Lead	Protection of human health	calendar year	0.5
Sulphur Dioxide (SO_2)	Protection of human health	1 hour	350
		24 hours	125
Particulate Matter (PM_{10})	Protection of human health	24 hours	50
		calendar year	40
Particulate Matter ($\text{PM}_{2.5}$)	Protection of human health	calendar year	25

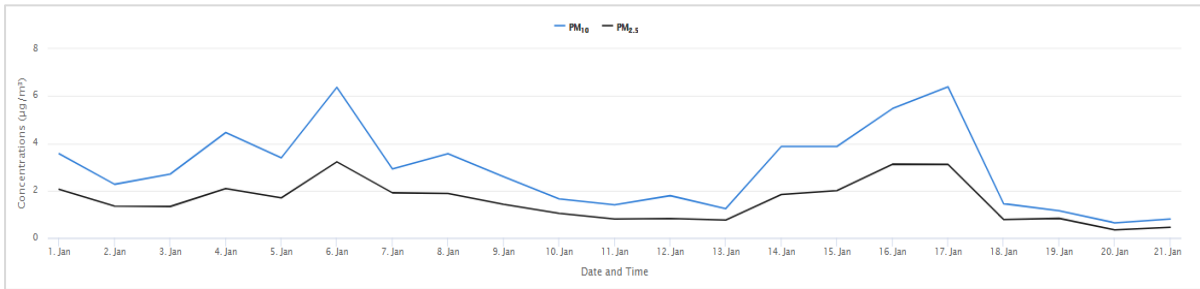
8.3 Receiving Environment at Kilnahue, Gorey, Co. Wexford

Gorey is a market town in north County Wexford, Ireland. It is beside the main M11 Dublin to Wexford Road. The development site is approximately 2km from the Gorey town centre and 30km from Wexford town. The development site has existing residential dwellings surrounding the north, east and south boundary. To the west is agricultural lands. Overall, the proposed development area is located within an area which includes sources of transportation related air emissions from roads, local residential/school transport and sources of domestic heating. The site is not in any immediate location of facilities that generate emissions that would create a risk to unsafe air quality limit values.

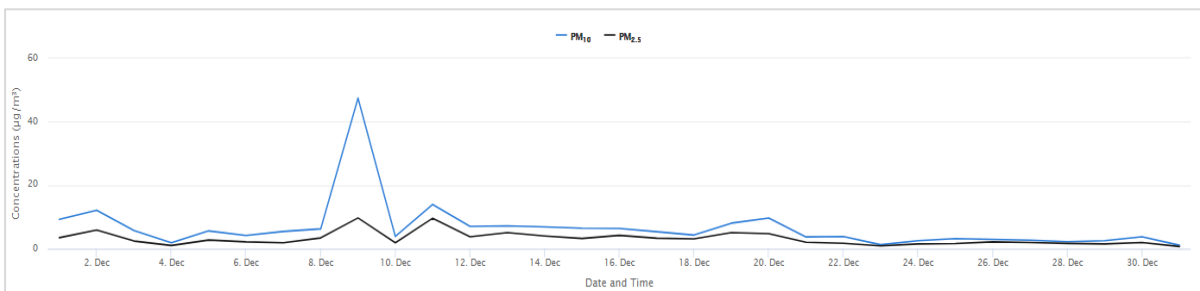
8.3.1 EPA Air Quality Monitoring Results

The EPA is the authority with responsibility for ambient air quality monitoring in Ireland and measures the levels of a number of atmospheric pollutants. Ambient air quality monitoring is carried out in accordance with the requirements of the CAFE Directive which has been transposed into Irish national legislation by the Air Quality Standards Regulations 2011. For the purposes of recording ambient air quality in Ireland it is divided into 4 zones: Zone A: Dublin, Zone B: Cork, Zone C: Other cities and large towns, Zone D: Rural Ireland. A series of monitoring stations are located across the country, these stations collect air quality data for public information. The proposed development site is located within Zone C, large towns. The EPA monitor at local sites and national sites. The nearest local EPA air quality monitoring station from the development site is Coach Rd, Gorey, Co. Wexford. These local

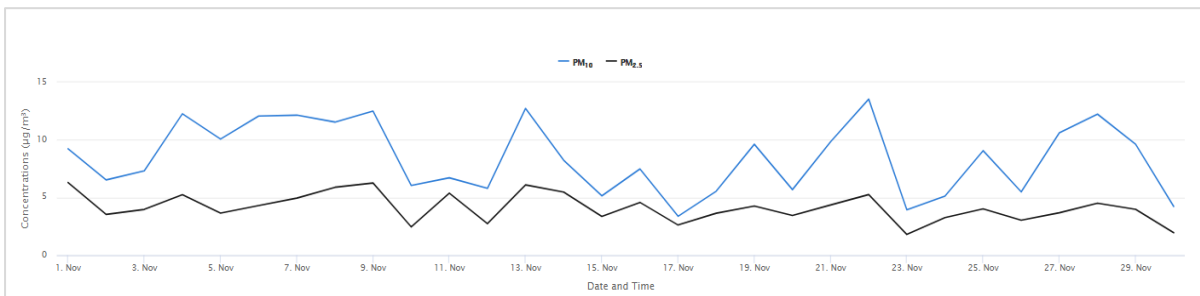
monitoring stations give people a rapid and up-to-date indication only, of air quality in their locality. Local monitoring data for PM can be obtained only up to a couple of months previous. The previous¹ 4 months graphs for Gorey PM emissions are illustrated below.



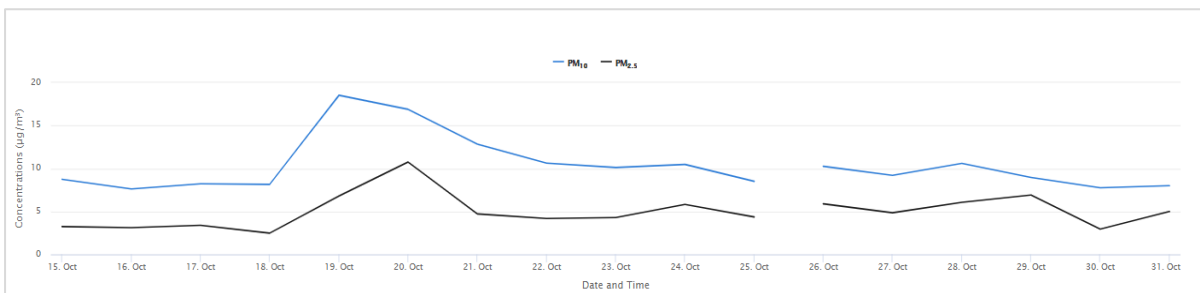
January 2021 monitoring data. Copyright EPA.



December 2020 monitoring data. Copyright EPA.



November 2020 monitoring data. Copyright EPA.



October 2020 monitoring data. Copyright EPA.

The nearest national EPA air quality monitoring station from the development site is Enniscorthy, Co. Wexford approximately 30km from Gorey. The EPA publish official data only from the national

¹ Gorey station is currently undergoing calibration works; therefore Jan 2021 is the most recent set of readings that could be obtained.

monitoring station on a yearly basis. Table 8.2 shows the annual mean value concentrations measured at Enniscorthy, Co. Wexford.

Table 8-2. Summary of data from the EPA ambient air monitoring report 2019, 2018 and 2017

Pollutant	Annual Mean Concentration (µg/m³)			Annual Limit for Protection of Human Health (µg/m³)
	2019	2018	2017	
Particulate Matter (PM _{2.5})	14.0	13.0	7.9*	20
Particulate Matter (PM ₁₀)	18.0	14.0*	12.7*	40
Nitrogen Dioxide (NO ₂)	12.0*	10.3*	8.0*	40
Carbon Monoxide (CO)	0.10* (mg/m³)	0.35* (mg/m³)	0.15* (mg/m³)	10 (mg/m³)
Sulphur Dioxide (SO ₂)	2.1*	3.3*	2.9*	20
Benzene	0.16*	0.16*	0.18*	5

* Enniscorthy, Co. Wexford monitoring station does not record all ambient air quality parameters outlined in the Directive. Therefore air quality in the receiving environment was assessed using the average annual mean value concentrations from all measured monitoring stations in Zone C.

8.3.2 Air Quality for Health

The EPA’s air quality index for health (AQIH) is a number from 1 to 10 that tells you what the air quality currently is and whether or not this might affect the health of you. A reading of 10 means the air quality is very poor and a reading of one to three inclusive means that the air quality is good.

Table 8-3. EPA’s air quality index for health (AQIH)

Band	Index	NO ₂ (µg/m³) 1 hour mean	PM _{2.5} (µg/m³) 24 hour mean	PM10 (µg/m³) 24 hour mean
Good	1	0-67	0-11	0-16
	2	68-134	12-23	17-33
	3	135-200	24-35	34-50
Fair	4	201-267	36-41	51-58
	5	268-334	42-47	59-66
	6	335-400	48-53	67-75
Poor	7	401-467	54-58	76-83
	8	468-534	59-64	84-91
	9	535-600	65-70	92-100
Very poor	10	>601	>71	>101

The health advice associated with the AQIH for people is as follows;

Table 8-4. EPA’s air quality index for health (AQIH) guidelines

Band	Index	Health advice for general population	Health advice for At-risk groups
Good	1	Enjoy your usual outdoor activities	Enjoy your usual outdoor activities
	2		
	3		
Fair	4	Enjoy your usual outdoor activities	Adults and children with lung problems, and adults with heart problems, who experience symptoms, should consider reducing strenuous physical activity, particularly outdoors
	5		
	6		
Poor	7	Anyone experiencing discomfort such as sore eyes, cough or sore throat should consider reducing activity, particularly outdoors.	Adults and children with lung problems, and adults with heart problems, should reduce strenuous physical activity, particularly outdoors, and particularly if they experience symptoms.
	8		
	9		
Very poor	10	Reduce physical exertion, particularly outdoors, especially if you experience symptoms such as cough or sore throat	Adults and children with lung problems, adults with heart problems, and older people, should avoid strenuous physical activity.

8.3.3 Significance of EPA Results and Receptors

The local monitoring data indicates the AQIH typically falls into the category of index 1 and on occasion fluctuates to index 2, both in the band of ‘Good’ air quality in terms of health for people in the vicinity. The national 2019-2017 levels of pollutants show the air quality parameter concentrations are all well below the limit values. It can be seen that the existing baseline air quality at the site locality can be characterised as being good with no extended exceedances of the National Air Quality Standards Regulations limit values. The principal local receptors that may be impacted by the proposed development are existing residential dwellings and national schools across Gorey Hill Lane to the northeast and existing residential dwellings to the south.

8.4 Impact of the Proposed Development

When considering a new development the impact on air quality must be considered for each distinct stage, construction phase and operational phase. It is important that there are no unacceptable decreases in ambient air quality levels predicted.

8.4.1 Construction Phase

The impact of the construction phase of the development on air quality is determined by an assessment of the nature and scale of dust generating construction activities associated with the proposed development. The main source of air quality impacts will be as a result of dust emissions from site activities. Emissions can lead to elevated PM10 and PM2.5 concentrations and can cause dust soiling. It is not easy to accurately quantify dust emissions arising from construction activities. Therefore, the impact was determined by a qualitative assessment In line with the UK Institute of Air Quality Management (IAQM) guidance document ‘Guidance on the Assessment of Dust from Demolition and Construction’.

A development site is allocated a risk category based on these factors: the sensitivity of the area to dust impacts and the scale and nature of the works. In line with the IAQM guidance document the

sensitivity of the area must first be assessed. High sensitivity receptors are regarded as residential properties and commercial properties and places of work are regarded as medium sensitivity while low sensitivity receptors are places where people are present for short periods.

There are between 10-15 high sensitivity receptors located less than 50m from the proposed boundary. Based on the IAQM criteria outlined in Table 8.5, receptor sensitivity to dust soiling is considered to be 'medium'.

Table 8-5. Sensitivity of the area to dust soiling effects on people and property

Receptor sensitivity	No. of receptors	Distance from source (m)			
		<20	<50	<100	<350
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

The IAQM guidelines also outline the assessment criteria for determining the sensitivity of the area to human health impacts. The effects on human health are classified as 'Low' according to the criteria outlined in Table 8.6. (EPA data reviewed previously gives an annual average of 18.0 µg/m³ for PM10).

Table 8-6. Sensitivity of the area to human health impacts

Receptor sensitivity	Annual PM10 concentrations	Distance from source (m)			
		No. of receptors	<20	<50	<100
High	>32 µg/m ³	>100	High	High	High
		10-100	High	High	Medium
		1-10	High	Medium	Low
	28-32 µg/m ³	>100	High	High	Medium
		10-100	High	Medium	Low
		1-10	High	Medium	Low
	24-28 µg/m ³	>100	High	Medium	Low
		10-100	High	Medium	Low
		1-10	Medium	Low	Low
	<24 µg/m ³	>100	Medium	Low	Low
		10-100	Low	Low	Low
		1-10	Low	Low	Low

The potential dust emission magnitude for each dust generating activity is taken into account, in conjunction with the previously established sensitivity of the area. The three types of dust releasing activities relevant to this project are earthworks, construction, and trackout. The dust emission magnitude can be classified as small, medium or large based on the definitions from the IAQM guidance. The sensitivity of the area is then combined with the dust emission magnitude for each dust generating activity to define the risk of dust impacts in the absence of mitigation, Table 8.7 outlines these criteria.

Table 8-7. IAQM risk of dust impacts

	Dust emission magnitude		
Sensitivity of area	Large	Medium	Small
High	High risk	Medium risk	Low risk
Medium	Medium risk	Medium risk	Low risk
Low	Low risk	Low risk	Negligible

Earthworks: involves excavating material, loading and unloading of materials, tipping and stockpiling activities. Expected dust emission magnitude is classified as ‘medium’ based on the site area being >2,500 m², potentially 10 heavy moving vehicles active and total material moved 20,000 tonnes – 100,000 tonnes. As outlined in table 8.7, the sensitivity of the area is combined with the dust emission magnitude. This results in a medium risk of dust soiling impacts and a low risk of temporary human health impacts.

Construction: involves the size of the infrastructure, method of construction, construction materials, and duration of build. Expected risk is classified as ‘medium’ based on the building volume being >25,000 m³ and construction material with potential for dust release such as concrete. As outlined in Table 8.4.2, the sensitivity of the area is combined with the dust emission magnitude. This results in a medium risk of dust soiling impacts and a low risk of temporary human health impacts.

Trackout: involves vehicle size, vehicle speed, vehicle numbers, geology and duration. Expected risk is classified as ‘medium’ based on the potential for 10-50 HDV (>3.5t) outward movements per day and having a road surface (50-100m) material with potential for dust release. As outlined in Table 8.8, the sensitivity of the area is combined with the dust emission magnitude. This results in a medium risk of dust soiling impacts and a low risk of temporary human health impacts.

Overall, prior to any mitigation in place, the risk of dust impacts as a result of the proposed development are summarised in Table 8.8.

Table 8-8. overall risk of dust impacts

	Dust emission magnitude		
Potential impact	Earthworks	Construction	Trackout
Dust soiling	Medium risk	Medium risk	Medium risk
Human health	Low risk	Low risk	Low risk

In order to minimise dust emissions, avoidance and mitigation measures will be put in place to reduce the impact levels such as, wind barriers and frequent cleaning and watering of the construction site roads, detailed measures are listed in section 8.5. Provided these measures outlined in the plan are adhered to, the air quality impacts during the construction phase will not be significant.

However even with a rigorous mitigation plan in place, it is not possible to guarantee that the dust mitigation measures will be effective all the time, and if, for example, dust emissions occur under adverse weather conditions, or there is an interruption to the water supply used for dust suppression, the local dwellings may experience short-term dust soiling. The likely scale of this would not be considered sufficient to change the conclusion that with mitigation in place the effects will not be significant.

8.4.2 Operational Phase

The operational phase of the proposed development has the potential to result in an impact on local air quality primarily as a result of the increased traffic movements associated with the development. The principal pollutants potentially are NO₂ and PM₁₀, the future occupancies health in regard to the air quality index could be affected by any increase.

The DMRB screening air dispersion model from the UK DMRB Screening Model, was used to assess the impact of traffic associated with the development. Projected transport figures from a recent traffic assessment were used to predict the concentrations of traffic-derived pollutants in future years. The model then combined background concentrations of pollutants, sourced from the EPA report in 2019 with predicted concentrations. Results were generated using an average speed of 20 km/h assuming congested traffic conditions. Using the DMRB screening air dispersion model, pollutant concentrations in future years were predicted at the development site. In order to quantify the magnitude of change in pollutant concentrations, the descriptors in table 8.9 were used. To describe the significance of the impact, table 8.10 was then used. These descriptor tables are from the Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (NRA).

Table 8-9. Definition of impact magnitude for changes in ambient air pollutant concentrations

Magnitude of Change	Annual Mean NO ₂ / PM ₁₀ (µg/m ³)	No. of Days with PM ₁₀ concentration >50µg/m ³	Annual Mean PM (µg/m ³)
Large	Increase/decrease ≥4	Increase/decrease >4 days	Increase/decrease ≥2.5
Medium	Increase/decrease 2 - <4	Increase/decrease 3 or 4 days	Increase/decrease 1.25 - <2.5
Small	Increase/decrease 0.4 - <2	Increase/decrease 1 or 2 days	Increase/decrease 0.25 - <1.25
Imperceptible	Increase/decrease <0.4	Increase/decrease <1 day	Increase/decrease <0.25

Table 8-10. Air quality impact descriptors for changes in annual mean NO₂, PM₁₀ and PM_{2.5} concentrations

Absolute Concentration in Relation to Objective /Limit Value	Changes in Concentration		
	Small	Medium	Large
Increase with Scheme			
Above Limit Value with Scheme (≥40µg/m ³ of NO ₂ or PM ₁₀) (≥25µg/m ³ of PM _{2.5})	Slight Adverse	Moderate Adverse	Substantial Adverse
Just Below Limit Value with Scheme (36-<40µg/m ³ of NO ₂ or PM ₁₀) (22.5-<25µg/m ³ of PM _{2.5})	Slight Adverse	Moderate Adverse	Moderate Adverse
Below Limit Value with Scheme (30-<36µg/m ³ of NO ₂ or PM ₁₀) (18.75-<22.5µg/m ³ of PM _{2.5})	Negligible	Slight Adverse	Slight Adverse
Well Below Limit Value with Scheme (<30µg/m ³ of NO ₂ or PM ₁₀) (<18.75µg/m ³ of PM _{2.5})	Negligible	Negligible	Slight Adverse

Two receptor locations were examined, the first A, located at Gorey Hill near private dwellings and the schools located on Gorey Hill. The second location B, near private dwellings and the R725 road, see image 8.1 for reference.



Image 8-1. receptor locations highlighted in blue

The results of the impact assessment at A arising from increased transport at worst case conditions are presented in Table 8.11. The results predict the future air quality relative to the existing baseline. The impact equates to a 'large' increase (based on the NRA criteria) in annual average NO₂. Using the NRA significance criteria, it results in a 'slight adverse' impact in terms of local impact as a result of cumulative traffic. The predicted PM₁₀ impact equates to a 'small' increase in annual average PM₁₀. A small increase in annual average PM₁₀ results in a 'negligible' impact in terms of local impact as a result of cumulative traffic. The modelled results do show an increase in annual NO₂ and PM₁₀ but each remain well below the limit values for EU regulations. Levels of benzene and CO are also predicted to be well below the statutory limits.

Table 8-11. Modelled results at location A.

Scenarios	Annual Average NO ₂ (µg/m ³)	Annual Average PM ₁₀ (µg/m ³)	Days > 50µg/m ³	Annual Average (µg/m ³) Benzene	Annual Average CO (µg/m ³)
Background	12.0	18.0	3.0	0.16	0.10
2027	17.6	19.24	3.0	0.21	0.15
Increase	+5.6	+1.24	0	+0.05	+0.05
Limits	40	40	35	5	10

The results of the impact assessment at B arising from increased transport at worst case conditions are presented in Table 8.12. The results predict the future air quality relative to the existing baseline. The impact equates to a 'large' increase (based on the NRA criteria) in annual average NO₂. Using the NRA significance criteria, it results in a 'slight adverse' impact in terms of local impact as a result of cumulative traffic. The predicted PM₁₀ impact equates to a 'small' increase in annual average PM₁₀. A small increase in annual average PM₁₀ results in a 'negligible' impact in terms of local impact as a result of cumulative traffic. The modelled results do show an increase in annual NO₂ and PM₁₀ but each remain well below the limit values for EU regulations. Levels of benzene and CO are also predicted to be well below the statutory limits.

Table 8-12. Modelled results at location B

Scenarios	Annual Average NO ₂ (µg/m ³)	Annual Average PM ₁₀ (µg/m ³)	Days > 50µg/m ³	Annual Average (µg/m ³) Benzene	Annual Average CO (µg/m ³)
Background	12.0	18.0	3.0	0.16	0.10
2027	17.0	19.02	3.0	0.20	0.14
Increase	+5.0	+1.02	0	+0.04	+0.04
Limits	40	40	35	5	10

In summary, results show an expected small increase in annual NO₂, PM₁₀, benzene and CO but each parameter remain well below the limit values for EU regulations. This predicted increase above the existing situation results in a negligible impact and would not result in a perceptible change in the existing local air quality environment.

8.4.3 Predicted Impact on Future Occupancy

Using the modelled data (which assumed constant congested traffic conditions at the site for worst case scenario) the air quality index for future occupancies health puts the site in an index 2 category for PM₁₀ and index 1 category for NO₂. The previous 4 months of local monitoring data indicate that the area is mostly in an index 1 category with a few occasions of levels recorded at index 2. However, this predicted increase to index 2 still has the same health advice for people which is 'Enjoy your usual outdoor activities'. At-risk groups of the population have the same health advice in index 2 of 'Enjoy your usual outdoor activities'. The predicted AQIH is good for future occupancy. Also, it is worth noting any measures to promote using public transport, cycling, walking, car sharing or a combination of these as alternatives to single occupancy private car travel could potentially improve the AQIH in the future.

8.5 Mitigation Measures

8.5.1 Remedial and Reductive Measures

Construction Phase

For all site activity the aim should be to prevent effects on receptors through the use of effective and practical mitigation. Full details of the dust management plan can be found in Appendix 8.1. At all times, the procedures within the plan will be monitored and assessed. Summary of mitigation measures include:

- Any site roads with the potential to give rise to dust will be regularly watered, as appropriate during dry and/or windy conditions.
- Hard surface roads will be swept to remove mud/aggregate materials from surface.
- Wheel washing system in place to dislodge accumulated dust and mud.
- Any unsurfaced roads will be restricted to essential site traffic only.
- Avoid unnecessary vehicle movements and limit speeds on site so as to minimise the generation of airborne dust, 10-15 km/h is suggested.
- All plant machinery not in operation will be turned off and idling engines shall not be permitted for excessive periods.
- All vehicles which present a risk of spillage of materials, while either delivering or removing materials will be loaded in such a way as to prevent spillage.
- Immediate clean-up of any spillages of dusty materials to minimise accumulations of loose dry goods.
- Location of temporary storage of dusty materials as far from the nearest sensitive receptors as practicable.
- Where drilling or pavement cutting, grinding or similar types of operations are taking place measures to control dust emissions will be used by the erection of barriers.
- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary.
- A complaints log shall be maintained by the appointed manager and in the event of a complaint relating to dust an investigation will be initiated.

Operational Phase

As outlined in the DMRB assessment, it is deemed that the operational phase will not generate air emissions that would have a significant adverse impact on local ambient air quality. There are no mitigation measures specified for the operational phase. Also, the Travel Plan aims to promote sustainability by enhancing public transport with regular and ongoing increases in the public transport capacity, both road and rail and to reduce dependency on the use of the private car.

8.5.2 Monitoring

If the construction contractor adheres to good working practices and the mitigation measures are in place, the levels of emission generated are assessed to be minimal and are unlikely to cause an impact on air quality. No monitoring is deemed necessary.

9.0 NOISE AND VIBRATION

9.1 Introduction

This chapter of this Environmental Impact Assessment has been prepared by DKP Environmental (DKPEV) and assesses noise and vibration impacts associated with the proposed development at Kilnahue lands, Gorey, Co. Wexford. The proposed residential development consists of residential housing units, duplex and apartment blocks, childcare facility, and two retail units and two community rooms. This chapter will identify and assess the impact of the proposed development in terms of noise and vibration during the construction phase and operational use with particular attention to the nearby residential units. Increased traffic volumes associated with the subject site is likely to be the main impact source. Traffic volumes for the proposed scheme have been projected in Chapter 12 and therefore the noise impact assessment for the operational phase of the subject site will consider the cumulative impact of the existing and new predicted volumes.

This assessment was prepared in accordance with the EIA Directive 2014/52/EC and current EPA guidelines. This section should be read in conjunction with any guidance documents for the site and project description sections of this EIAR.

9.2 Research Methodology

9.2.1 Construction Noise Criteria

The level of environmental noise generated during the construction phase of any development is determined primarily by the exact construction methods employed. The level of the noise impact of these methods will arise from the specific sound power levels generated by the plant and machinery used, the duration of each particular construction activity, as well as the time and location in which the equipment is used. The potential sources of environmental noise during the construction phase of the development will primarily arise from increased traffic on the surrounding roads (from construction workers and delivery of plant and materials) and actual on-site works where plant and machinery will be deployed.

As at this point of time we do not have an any actual specific construction plan to outline details of plant and machinery to be used, materials, construction phasing and working hours) it is not possible to accurately model construction noise levels using the recommended standard ISO 9613:1996 - Acoustics, Attenuation of sound during propagation outdoors however a basic analysis of worst case noise levels has been calculated. This basic calculation was based on the current construction methods applied on site to complete the works and assessed noise impacts for the anticipated construction equipment.

As we do not have any published statutory Irish guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project however local authorities normally control construction activities by imposing limits on the hours of operation with certain noise limits at their discretion. For this report we applied the British Standard BS 5228-1:2009+A1: 2014 - Code of practice for noise and vibration control on construction and open sites.

BS 5228-1:2009+A1: 2014 sets out a method of calculating the propagation of sound towards a receiver from the use of certain construction plant and machinery on a construction site. The standard describes single octave sound power level data for a range of standardised plant and machinery as would be expected to be the norm on construction sites.

9.2.2 Construction Vibration Criteria

During the construction phase of a development certain aspects of the site work may result in increased levels of vibration in the vicinity of the site. BS 5228-2:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites: - Part 2: Vibration, outlines a number of calculation methods for predicting peak particle velocity (PPV) resulting from construction works on open sites.

The prediction methods require specific information relating to the soil composition and compaction levels within the propagation path between the construction area and nearest receiver, as well as highly detailed information regarding the type and location of plant and machinery. As such specific data is not available a quantitative impact of vibration will not be undertaken as part of this assessment. Construction practices employed should have regard to best practice as recommended in the following standards and guidance:

- BS 7385-1 (1990) Evaluation and Measurement for Vibration in Buildings - Guide for Measurement of Vibration and evaluation of their effects on buildings.
- BS 7385-2 (1993) Evaluation and Measurement for Vibration in Buildings - Guide to damage levels from Ground borne Vibration.
- BS 5228-2:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration.
- BS 6472-1 (2008) Guide to evaluation of Human Exposure to Vibration in Buildings - Vibration sources other than Blasting.

9.2.3 Operational Noise Criteria

As we do not have any statutory limits, it is therefore necessary to reference appropriate best practice guidance and standards in order to determine the impact of the subject site on the noise climate in the surrounding area during the operational phase. It is important to note that the primary potential source of noise arising during the operational phase is that of road traffic associated with the increased population of the area.

For the calculation and assessment of road it has generally been best practice to assess road traffic noise on the basis of the LA10 18-hour parameter as outlined in the CRTN document. Transport Infrastructure Ireland (formerly the National Roads Authority (NRA)) have produced guidelines for national road schemes however in this development we do not have any national primary road hence this standard would not apply.

The World Health Organisation propose guideline values for the prevention of moderate and serious nuisance in outdoor areas as 50dB LAeq (16 hour) and 55dB LAeq (16 hour) respectively although a more appropriate criteria for assessing disturbance or annoyance from noise arising from the site would be related to the significance of changes in noise levels as perceptible to human beings.

The information in the table below is taken from the ‘Guidelines for Noise Impact Assessment’ produced by the Institute of Environmental Management and Assessment (IEMA). This document replaces the draft guidelines published by the Institute of Acoustics (IOA) and IEMA in April 2002 and shows an appropriate impact.

Table 9-1. Guidelines for Noise Impact Assessment (IEMA)

Change in Noise Level	Subjective Reaction	Impact Guidelines for Noise Impact assessment significance	Impact Guidelines on the Information to be contained in EIA's (EPA)
0 dB	No change	None	Imperceptible
0.1 to 2.9 dB	Barely perceptible	Minor	Slight
3.0 to 4.9 dB	Noticeable	Moderate	Moderate
5.0 to 9.9 dB	Up to a doubling or halving of loudness	Substantial	Significant
10 dB or more	More than a doubling or halving of loudness	Major	Profound

The following tasks were carried out in order to assess the noise impacts of the subject site on identified receptors during the operational phase of the scheme:

- A survey has been conducted to establish baseline noise levels or background noise levels at the nearest noise sensitive receptor surrounding the site.
- A calculation of anticipated noise levels arising at the nearest noise sensitive receptors due to current and forecast increases in traffic arising from the subject site as per basis of the LA10 18hour parameter as outlined in the CRTN document.
- An assessment of the cumulative calculated anticipated noise levels and potential impact upon noise sensitive receptors was carried out with reference to best practice guidelines in the assessment of environmental noise.

9.2.4 Vibration Assessment Criteria

There are generally accepted criteria for vibration levels that would be likely to lead to complaints and vibration levels that would be likely to lead to structural damage. These levels are outlined in the guidance documents BS6472: 1992 Guide to Evaluation of human exposure to vibration in buildings (1Hz to 80Hz), and BS7385: Part 2 1990: Evaluation and measurement for vibration in buildings - Guide to damage levels from ground-borne vibration.

9.2.5 Operational Vibration Criteria

Traffic has been identified as the only likely source of vibration during the operational phase of the scheme. In the case of nominally continuous sources of vibration, such as traffic, vibration is perceptible at around 0.5 mm/s PPV and may become disturbing or annoying at higher magnitudes. Currently no major sources of vibration exist on the site. It would therefore be appropriate to assume that negligible vibration impacts will occur during the operation of the subject site and no further assessment is deemed to be required.

9.3 Receptor Location Identification

In this chapter an assessment was made on receptor location having due regard to several considerations including:

- Determining the most exposed or nearest sensitive receptor (NSR) to potential sources of environmental noise related to current and future increases in traffic volumes.
- Ensuring that the number of receptors assessed would allow for sufficient baseline data to be obtained in the allocated background measurement period but also that the spatial spread of receptor locations was such that all locations in and around the subject site were assessed.

The table below represents the background noise monitoring locations chosen and image 9.1 highlights these monitoring stations on a site map.

Table 9-2. background noise monitoring results

Measurement location	Location	Measurement Type	Justification
Station 1	New junction location with R725	Manual	To determine back ground noise levels
Station 2	New Junction location with Gorey Hill	Manual	To determine back ground noise levels



Image 9-1. receptor locations highlighted in blue

9.3.1 Calculated Noise levels

For the anticipated road traffic noise levels and cumulative noise levels the measured noise level data was applied and calculated on the basis of the LA10 18hour parameter as outlined in the CRTN document issued by Transport Infrastructure Ireland (formerly the National Roads Authority (NRA)). Using the Chapter 12 traffic report for the increased volume of traffic R725 and the Gorey Hill Road being the 2 no. roads taking traffic in and out of the new proposed development.

9.3.2 Receiving Environment

Gorey is a market town in north County Wexford, Ireland. It is beside the main M11 Dublin to Wexford Road. The development site is approximately 2km from the Gorey town centre and 30km from Wexford town. The development site has existing residential dwellings surrounding the north, east and south boundary. To the west is agricultural lands.

9.3.3 Back-ground Noise Survey

To assess the surrounding background noise levels, a daytime background noise survey was carried out on October 14th and 15th 2021 outside the covid lockdown period. During the survey the 2 attended stations were monitored and at each station three consecutive 15-minute measurements were recorded during the period from 08:00 to 13:00. The measurements taken are deemed to be representative of typical noise levels on the relevant roads.

The measurements have been performed using a Bruel & Kjaer Type 2260 sound level meter and Bruel & Kjaer 4231 sound level calibrator. All measurements were carried out in accordance with ISO 1996: 'Acoustics-Description and measurement of environmental noise'. Weather conditions during the survey were in line with the conditions described within ISO 1996, Acoustics 'Description and Measurements of Environmental Noise'. Weather conditions were rainy and cool with a moderate wind.

The following environmental noise parameters were measured which are defined below.

- **LAeq** is the A-weighted equivalent continuous steady sound level during the measurement period and effectively represents an average ambient noise value.
- **LAm_{ax}** is the maximum A-weighted sound level measured during the measurement period.
- **LAm_{in}** is the minimum A-weighted sound level measured during the measurement period.
- **LA10** is the A-weighted sound level that is exceeded for 10% of the sample period; this parameter is typically used to quantify traffic noise.
- **LA90** is the A-weighted sound level that is exceeded for 90% of the sample period; this parameter is typically used to quantify background noise.

Typical ranges of noise levels are presented in the table below comparing against the baseline noise levels measured:

Table 9-3. typical ranges of noise levels

Sound level (dB (A))	Description of Activity
0	Absolute silence
25	Very Quiet
35	Rural night time
55	Suburban roadway 0.5km away
70	Busy Restaurant
85	Very busy pub, voice is raised to be heard
100	Rock concert
120	Uncomfortably loud, conversation impossible
140	Noise causes pain in ears

9.3.4 Back-ground Noise Survey Data

The following 2 no. tables are the measured and calculated (average) background noise levels from the 2 no. monitoring locations.

Table 9-4. measured and calculated (average) background noise levels at station no. 1

Station 1						
Time	LAeq	LAmaz	L Amin	LA10	LA90	Comments
8.00	59	86	48	66	49	Mainly general traffic noise with occasional lorry for construction site main artery road.
9.00	59	90	48	66	50	
11.00	57	81	47	60	49	
13.00	60	83	47	60	49	
Avg.	59			61.5	49	

Table 9-5. measured and calculated (average) background noise levels at station no. 2

Station 2						
Time	LAeq	LAmaz	L Amin	LA10	LA90	Comments
8.00	57	77	44	58	44	Mainly general traffic noise with occasional lorry for construction site main artery road
9.00	58	78	48	62	47	
11.00	56	74	44	55	44	
13.00	56	80	45	56	44	
Avg	56			56	45.5	

9.3.5 Basic Noise Measurement Overview

During daytime periods average ambient noise levels were in the range 58 to 61dB LAeq Average background noise levels were in the range 47 to 48dB LA90 and average LA10 values, typically used to describe traffic noise were in the range 60 to 61dB, indicating that most of the measured noise levels would have arisen from traffic noise.

9.3.6 Back-ground Vibration Survey

Only minor vibration was observed during the noise measurements and therefore it has not been considered necessary to undertake baseline vibration monitoring as there is no evidence to suggest that existing receptors are currently affected by appreciable environmental vibration.

9.4 Characteristics of the Proposed Development

The proposed development is for residential use and consists of dwelling houses and apartments spread over multiple blocks with a total of 421 units, childcare facility, and two retail units and two community rooms.

9.5 Potential Impact of the Proposed Development

The anticipated noise impacts on the surrounding environment must be considered for both the short-term impact of the construction phase and the operational phase.

9.5.1 Construction Phase

Short-term noise impacts are only to occur during the construction phase of the development due to the requirement to use plant and machinery on and to the construction site. In the absence of specific construction information regarding the construction stage, construction noise impacts cannot be fully quantified at this point, therefore sample calculations have been provided. Minor short-term vibration impacts may occur during the construction phase as a result of the use of heavy plant and machinery; however, these impacts will be unlikely to propagate beyond the construction site boundary.

9.5.2 Operational Phase

As per measured noise level data the main potential noise source that would be evident during the operational phase of the development would be that of increased road traffic noise associated with the subject site. In general, this can be categorised as:

- Residents small vehicular traffic in and out of the development site.
- Delivery and service vehicles servicing the dwelling houses.
- General activities, landscape maintenance, cleaning, energy producing equipment etc.
- Vibration is not anticipated to be a contributing factor in the operational phase.

9.6 Predicted Impact of the Proposed Development

9.6.1 Construction Noise

Using the method outlined in BS5228, a worst case LAeq value at potential NSRs at distances of 100m, 150m, 200m and 250m have been calculated for a range of construction plant. The following plant has been applied to give an example of the potential construction noise levels:

- Heavy delivery trucks.
- Ground works excavators.
- Noisy construction plant (mixers, vibrators).

We have used BS 5228-1:2009+A1: 2014 to anticipate/calculate the construction noise levels in the proposed development. This methodology relates to the method for construction vehicles/plant in a defined construction area. The prediction of the LAeq from construction plant operating over a small area or on site can be used for other activities when items of construction plant are operating in close proximity to the reception point, taking into account the adjustment of the predicted LAeq for standing and idling time of the plant. It is assumed that over a 1-hour period, all construction plant

will be operational for 80% of the time. The results of these calculations are presented in the tables below.

Table 9-6. Sound power levels typical construction vehicles/equipment.

Noise Source	Sound Power LWA dB
Heavy delivery truck	102
Ground works excavator	100
Noisy construction plant (mixers, vibrators)	106

Table 9-7. Calculated predicted sound power levels at certain distances and maximum allowable SPL during weekdays and Saturday.

Distance of Potential NSR from construction site	Predicted Noise levels at NSR LAeq dB	BS5228-1 (2009)	
		Monday-Friday (07.00–19.00)	Saturday (07.00–13.00)
100m	59	70	65
150m	56		
200m	53		
250m	51		

As most of the construction sites will generally be within 100m of an occupied building the results of the indicative construction calculations shows that the resultant LAeq (1 hour) values of using such construction plant and vehicles would be in the region of 59db LAeq and below the maximum allowable day time ambient level of 70dB LAeq. BS5228-1 (2009) +A1: 2014 specifies that a daytime limit of 70dB LAeq shall apply on weekdays and a daytime limit of 65dB LAeq shall apply on Saturday.

The ambient noise levels at the nearest noise measurement location with construction noise (NSR2) are comfortably below the BS5228-1 limits and also will be short-term in duration. The construction phase generally has no noticeable change on the noise environment in the longer term.

9.6.2 Construction Vibration

We only anticipate minor temporary ground borne vibration events during the construction phase, but the exact impact of these vibration impacts cannot accurately be quantified.

9.6.3 Operational Noise

The anticipated noise impacts from the overall development during its operational phase will mainly be as a result of increased small vehicle traffic flows along the incoming and outgoing routes into the proposed development site. It is anticipated that the additional road traffic noise attributable to the development (cumulatively with existing R725 and Gorey Hill Road traffic) will result in an increase in the baseline noise environment by 1.0 to 1.5 dB(A) at the new proposed site’s R725 junction entrance and by 1.25 to 1.5 dB(A) at the proposed site’s Gorey Hill Road junction.

The change in noise levels and the significance of such changes can be categorised by the Guidelines for Noise Impact Assessment, Institute of Environmental Management and Assessment. The table below details the impact/category.

Table 9-8. Changes to noise levels impact categorization table.

Change in Noise Level	Subjective Reaction	Impact Guidelines for Noise Impact assessment significance	Impact Guidelines on the Information to be contained in EIAR's (EPA)
0 dB	No change	None	Imperceptible
0.1 to 2.9 dB	Barely perceptible	Minor	Slight
3.0 to 4.9 dB	Noticeable	Moderate	Moderate
5.0 to 9.9 dB	Up to a doubling or halving of loudness	Substantial	Significant
10 dB or more	More than a doubling or halving of loudness	Major	Profound

Based on the table above and the anticipated increase in noise levels we deem the operational noise impact to be categorised as ‘Slight’ at the worst case. The increase in traffic associated with the proposed development scheme is therefore not expected to give rise to any significant noise nuisance in the area. We note that as part of the Government Climate Change action plan that petrol and diesel passenger vehicles are being phased out and replaced by quieter electric vehicles eventually leading to less operational noise.

9.6.4 Operational Vibration

Operational vibration is deemed not to have any noticeable impacts on the development.

9.7 Remedial and Reductive Measures

DKP_{EV} do not anticipate the requirement of any remedial measures but list the following recommendations mainly for the construction sites;

- Ensure that the local authority guidelines or planning directives to noise levels and operational times are adhered to.
- Prepare a construction phase operational plan with regards to limiting noise nuisance.
- Ensure all construction vehicles and plant are regularly maintained including any noise control measures such as attenuators, filters etc.
- Limit any construction noise spreading to neighbouring site by erecting temporary noise barriers (site boundary hoarding).
- Schedule particular high-level noise activities for times when increased noise levels are less sensitive or notify neighbouring residents or any sensitive sites.

9.8 Monitoring

No noise monitoring is deemed necessary for the operational phase however noise monitoring will most likely be a requirement as directed by the local authority for the construction phase based on the local authorities imposed limits on the hours of operation and noise limits. No vibration monitoring is deemed necessary for both the operational and construction phase.

10.0 CLIMATE

10.1 Introduction

Chapter 10 of this Environmental Impact Assessment has been prepared by DKP Environmental (DKP_{EV}) and assesses the effects of the proposed development on Carbon Dioxide (CO₂) emissions effecting the current climatic conditions. The proposed development at Kilnahue lands, Gorey, Co. Wexford consists of residential housing units, duplex and apartment blocks, a childcare facility, and two retail units and two community rooms. This section will identify and assess the impact of the proposed development in terms of CO₂ emissions during the construction phase and when in full operational use. We note that although the construction phase contributes to CO₂ emissions through the type of construction methods, choice of materials, transport/traffic requirements etc its impact compared with the operational use is minimal. This assessment was prepared in accordance with the EIA Directive 2014/52/EC and current EPA guidelines.

10.2 Research Methodology

CO₂ is the largest and most important contributor to climate change. Methane, nitrous oxide, other gases and ozone are also important greenhouse gases. CO₂ is particularly important owing to its role in the global carbon cycle, which is central to life on Earth. This cycle is being significantly disrupted by the combustion of fossil fuels. As a consequence, CO₂ is accumulating in the atmosphere, where it is the key driver of global climate change. It is difficult to accurately apportion any increase in CO₂ emissions as a result of the proposed development at Kilnahue lands to any specific climate impacts other than noting that any increase large or small will more than likely also effect the climate or climate change. We have therefore concentrated the report on the proposed development's CO₂ emission impact and methods to reduce this to a minimum on both the construction and operational stages in line with Ireland's National Policy Position on 'Climate Action and Low Carbon Development'.

10.2.1 Climate Policy

The National Policy Position on Climate Action and Low Carbon Development was published on in April 2014 but was updated with the government's latest plan in January 2021. The policy sets a fundamental national objective to achieve transition to a competitive, low-carbon, climate-resilient and environmentally sustainable economy by 2050. The National Policy Position envisages that development of National Mitigation Plans will be guided by a long-term vision of low carbon transition based on aggregate reduction in CO₂ emissions of at least 80% compared to 1990 levels by 2050 across the construction and transport section relative to this planning application.

10.2.2 Transport

Transport / road transport is currently the second largest contributor of greenhouse gas emissions (after agriculture) at +/- 20%. Between 1990 and 2015, the transport sector showed the greatest overall increase of +/- 130% and increases are linked to economic prosperity with year on year increases observed up to 2007 followed by six years of year on year decrease during the economic downturn.

The latest EPA projections from 'An Integrated Assessment 2020' state greenhouse gas emissions from transport accounted for 20.3 per cent of Ireland's total national emissions in 2019. EPA projections indicate that transport emissions are projected to decrease by 38.6 per cent over the period 2021-2030 to 7.6 Mt CO₂ eq under the 'with additional measures' scenario, which assumes that 936,000 electric vehicles, including approximately 840,000 passenger cars, will be on the road by 2030.

10.2.3 Residential

Emissions from the residential sector have fluctuated in the period 1990 to 2015 but overall the 2015 emissions are +/- 20% lower than their 1990 level. Initially there was a sharp reduction in emissions in the early 1990's from residential fuel switching to cleaner fuels. The increase in housing stock drove a gradual upward trend in the emissions from the residential sector after 1998 to reach a peak in 2010. For the residential sector under the various (energy reduction) schemes the CO₂ emissions are targeted to be reduced by 60% for new dwellings mainly through the implementation of the new Nearly Zero Energy Building (NZEB) regulations (Part L 2017 for non-residential units and Part L 2019 for residential units) and increased use of renewable energy.

The latest EPA projections from 'An Integrated Assessment 2020' state emissions are projected to decrease by 52.4 per cent between 2021 and 2030 to 2.9 Mt CO₂ eq under the 'with additional measures' scenario. This scenario assumes full implementation of the measures in Ireland's Climate Action Plan, including upgrades to homes and significant supports for heat pumps.

10.3 Receiving Environment

Gorey is a market town in north County Wexford, Ireland. It is beside the main M11 Dublin to Wexford Road. The development site is approximately 2km from the Gorey town centre and 30km from Wexford town. The development site has existing residential dwellings surrounding the north, east and south boundary. To the west is agricultural lands.

10.4 Potential CO₂ Emission Effect

The CO₂ impact in this development is affected by the construction phase and operational residential phase with the latter dominating the emissions. In essence any new development will add to existing CO₂ emissions until we have managed to construct & operate at zero emissions however in the meantime it is key to limit the additional CO₂ emissions to a minimum.

10.4.1 Construction Phase

The construction phase of buildings has 2 no typical CO₂ emission sources: Transport and embodied carbon dioxide of building materials. The most obvious emissions are from transport i.e. vehicles, equipment etc during the construction phase but carbon dioxide is also accounted for as a result of the type of materials used. Each material carries an element of CO₂ known as embodied carbon dioxide which represents the total amount of CO₂ attributed to a material over the lifetime (60 years) of a building. Embodied CO₂ represents the CO₂ attributed to the material including the exploration, manufacturing, transportation to site, the use during the life cycle of the dwelling and finally the removal or recycling. Local materials like wood or stone have relative low CO₂ factors, manufactured materials like Portland cement, steel, aluminium have very high CO₂ factors and their use should be

minimised where possible. The university of Bath have an elaborate list of building material with their embodied carbon dioxide factor listed for each material. The embodied CO₂ quantity is normally generated using the bill of quantities for a building however in this chapter we have applied the data from a typical 90m² residential unit. The construction phase of the scheme only emits CO₂ and other possible greenhouse gasses in the relative short term.

10.4.1.1 The Construction Phase Baseline

The base line construction transport CO₂ data is based on an average 4,500km of vehicular movement of HGV's (50%), LGV's (35%) and private cars (15%) with a combined average carbon output of 255 gr/km/CO₂ taken from the Irish Construction Federation statistics resulting in emission totalling +/- 1100 kg CO₂ for the construction period.

The base line embodied CO₂ data is taken from the data base available from the university of Bath CO₂ embodied carbon dioxide tables with a typical average residential unit (90m²) to embody +/- 23,000 kg CO₂ using typical traditional building materials

Table 10-1. Construction phase base line CO₂ emissions

Construction phase base line CO ₂ emissions	Life cycle impact emission rate kgCO ₂ /m ²	Single unit Emission ton-CO ₂
	baseline	baseline
Construction transport	0.23	1.1
Construction embodied CO ₂	4.8	23.0
Total impact	5.0	24.1

10.4.2 Operational Phase

The operational phase of the buildings also has 2 no typical CO₂ emission sources: Transport and energy mainly for heating/hot-water use. During the operational phase a residential development emits CO₂ through vehicular traffic into and out of the development and energy usage within the buildings. Vehicular impact is mainly addressed using a predicted traffic count based on general transport use for a residential development taking in account any proposed central locations for schools, social / recreational spaces and the inclusion of options for pedestrian and bicycle movement with a view to encouraging public transport. We note that the Governments Climate Change policy sets out to phase out petrol and diesel cars by 2030 hence this will result in a significant CO₂ reduction it is envisaged at least 936,000 electric vehicles, both passenger and commercial, will be on the road by 2030 with additional charging infrastructure to cater for planned growth. Transport emissions from the residential sector have fluctuated in the period 1990 to 2015 but overall the 2015 emissions are +/- 20% lower than their 1990 level. Initially there was a sharp reduction in emissions in the early 1990's from residential fuel switching to cleaner fuels. The increase in housing stock drove a gradual upward trend in the emissions from the residential sector after 1998 to reach a peak in 2010.

CO₂ emissions from energy supplies to buildings is the more significant part of the overall operational development operational contribution. The main energy supply CO₂ emissions in residential developments come from providing space heating and domestic hot-water heating. In recent years great strides have been made with regards to reducing energy for space heating by the use of efficient

technologies (heat pumps, photovoltaic solar panels) however hot-water heating is determined mainly by its use and therefore reductions are harder to achieve.

The operational phase of a building is much longer than the construction phase with the standard building life cycle period of 60 years. As a result of the much longer operational phase any reductions made to this have significant impacts on the CO₂ emissions over the life cycle period of the building.

10.4.2.1 Operational Phase Baseline

The base line construction transport CO₂ data for residential vehicular movement CO₂ emissions are based on an average of 10,000km/year per residential unit with a current vehicular output of 175 gr/km to represent private and LGV’s manufactured between 2005 and 2022 resulting in a yearly emission of 1750 kg/CO₂/year or 1.75 ton-CO₂/year. The base line CO₂ emissions from energy supplies to buildings is the more significant part of the overall development’s operational phase contribution. Using the national software for CO₂ emissions attributed to energy supplies for a typical 90m² residential unit the emissions of a standard reference unit 5150 kg/CO₂/year or 5.15 ton-CO₂/year.

Table 10-2. Operational phase base line CO₂ emissions

Operational phase base line CO ₂ emissions.	Life cycle impact emission rate kgCO ₂ /m ²	Single unit 1 year ton-CO ₂ baseline
Transport	21.9	1.75
Energy (heat & hot water)	64.4	5.15
Total impact	86.3	6.90

Transport emissions personal and delivery vehicles are being reduced through EU and national initiatives and regulation on a continuous basis. CO₂ emissions from cars are regulated through EU legislation which sets statutory maximum emission targets for new vehicles currently set to achieve an average of 95 grams of CO₂ per km in 2022 compared to the current average vehicular emission rate of 175 gr/km.

10.5 Minimising CO₂ Emissions

The following sections are reduction measures implemented in the project’s CO₂ emission calculations to illustrate the effects of such reductions on the environment

10.5.1 Construction Phase Transport

CO₂ reduction measures to minimise impacts from transport during the construction phase include the following:

- Local sourcing of construction materials such as the recycling of material from excavations for reuse on site.
- Implementation of the Traffic Management Plan to minimise congestion and queuing, reduce distances of deliveries and eliminate unnecessary loads.
- Reducing the idle times by providing an efficient material handling plan that minimises the waiting time for loads and unloads. Reducing idle times could save up to 10% of total emissions during construction phase.

- To turn off engines when machinery is not required to operate in the relative short term unless this is an issue for security or functionality reasons.
- Periodic maintenance of plant and equipment.
- Technical inspection of vehicles to ensure they will perform the most efficiently.
- Possible use of electric construction equipment / vehicles.

10.5.2 Construction Phase Embodied CO₂

Embodied CO₂ is the amount of carbon dioxide a material emits to the environment per unit (weight / volume) including its exploration, manufacturing process, transport to site, its 60 year use and end-of -life requirements also known as the Cradle-to-Grave impact. Embodied CO₂ is attributed to all materials to be used on site and by minimising or avoiding certain materials the impact on CO₂ emissions can be reduced by:

- Increasing the use of locally available recycled materials.
- Reducing the use of materials with a high embodied CO₂ element.
- Increasing the use of “green” concrete (Granulated Blast Furnace Slag to replace Portland cements as the latter has significant embodied CO₂.)
- Reducing the use of metals. Metals generally contain the highest embodied CO₂ element of all materials mainly due to their exploration and manufacturing processes.

10.5.3 Operational Phase Transport

Transport emissions personal and delivery vehicles are being reduced through EU and national initiatives and regulation on a continuous basis. CO₂ emissions from cars are regulated through EU legislation which sets statutory maximum emission targets for new vehicles currently set to achieve an average of 95 grams of CO₂ per km in 2022. The following is applied to lower CO₂ emissions as a result of transport:

- Encourage the use of electric cars.
- Encourage the use of new low CO₂ petrol cars.
- Utilise available fiscal measures for the use of electric vehicles or renewable fuels.
- Design and plan the overall project in such manner as to encourage walking and cycling.
- Design and plan certain required facilities like schools, medical centres, shopping areas recreational spaces, within the development to lower the need to use motorised vehicles.
- Design and plan public transport routes throughout the development to encourage the use of public transport.

10.5.4 Operational Phase Energy CO₂ Emissions

Under the new building regulation requirements (NZEB), in not so many words, the electrical and thermal energy systems in buildings must be designed and constructed to deliver at least a 70% primary energy reduction and a 60% CO₂ reduction over the Part L reference dwelling and have at least 20% primary energy equivalent energy coming from on-site produced renewable energy.

To achieve these reductions to following outline specification can be applied:

- Ground floors: $U \leq 0.110 \text{ W/m}^2\text{K}$

- External walls: $U \leq 0.150 \text{ W/m}^2\text{K}$
- Party walls: $U = 0.0 \text{ W/m}^2\text{K}$ (solid party wall)
- Roofs: $U \leq 0.125 \text{ W/m}^2\text{K}$
- Window & frame: $U \leq 1.20 \text{ W/m}^2\text{K}$, Solar transmittance ≤ 0.64
- External (unglazed) door & frame: $U \leq 1.2 \text{ W/m}^2\text{K}$
- Cold bridging: $U \leq 0.08 \text{ W/m}^2\text{K}$ special construction joints applied.
- Thermal mass: TP250
- Ventilation: Humidity controlled natural ventilation / intermittent extracts or full MVHR.
- Air tightness: Design assumption $\leq 2.75 \text{ m}^3/\text{m}^2\cdot\text{h}$
- Lighting: 100% LED
- Controls: Time clock/ thermostatic control for each separate heating/hot-water zone
- Circulation pumps: Class A variable speed pump
- Heating / hot-water system: Air source heat pump / exhaust air heat pump.
- Renewable energy: Air source heat pump / exhaust air heat pump.

10.6 Effects of reductions measures

Applying the suggested reduction measures listed in sections 10.5.1,-2,-3 and -4 effects the emissions for a single unit and for the total combined number residential units as follows;

Table 10-3. Construction phase base line CO₂ emissions and effects of reductions

Construction phase base line CO ₂ emissions and effects of reductions	Life cycle impact emission rate kgCO ₂ /m ²		Single unit Emissions ton-CO ₂	
	baseline	reduced	baseline	reduced
Construction transport	0.23	0.20	1.1	1.0
Construction embodied CO ₂	4.8	4.0	23.0	19.0
Total impact	5.0	4.2	24.1	19.9

For ease of calculation to establish total project CO₂ emissions we have assessed the creche, 2 no. retail units and 2 no communal rooms as 5 no residential units as their energy platform would not be dissimilar. We note the reduction of 12.5% on transport and 17.5% on embodied CO₂ reductions to result in a reduction of 4.2 tonCO₂ for a single unit and a reduction of 1,773 tonCO₂ for the 426 units. The emission rate for the construction phase was reduced from 5.0 kgCO₂/m² to 4.2 kgCO₂/m² or an overall reduction of 17.3%

Table 10-4. Operational phase base line CO₂ emissions and effects of reductions

Operational phase base line CO ₂ emissions and effects of reductions	Life cycle impact rate / m ² kgCO ₂ /m ²		Single unit 1 year ton-CO ₂		426 units 1 year ton-CO ₂	
	baseline	reduced	baseline	reduced	baseline	reduced
Transport	21.9	19.0	1.75	1.52	745.5	649
Energy (heat & hotwater)	64.4	18.0	5.15	1.44	2193.9	614
Total impact	86.3	37.1	6.90	2.96	2939.4	1263

For ease of calculation to establish total project CO₂ emissions we have assessed the creche, 2 no. retail units and 2 no communal rooms as 5 no residential units as their energy platform would not be

dissimilar. We note the reduction of 13.0% on transport and 72.0% on energy CO₂ reductions to result in a reduction of 3.9 tonCO₂ per year for the average single unit totalling 1,677 tonCO₂ / year for 426 units. Over the 60 year life cycle of the building this represents a reduction of 236.1 tonCO₂ for a single unit and a total of 100,591 tonCO₂ for the 426 units. The emission rate for the construction phase was reduced from 86.3 kgCO₂/m² to 37.1 kgCO₂/m² or an overall reduction of 57.0%

10.7 National 2022 and 2030 CO₂ emissions.

The impact on Irelands current and 2030 predicted CO₂ emissions are based on the EPA data issued in their “Greenhouse Gas Emissions projection report 2020-2040” report. For this chapter we have targeted the current and 2030 data being the first major milestone for European. The emissions are expressed in Mt or one million (Mega) tons.

Table 10-5. National overall CO₂ emissions in 2022 and 2030.

EPA CO ₂ emission data	National emissions Mt-CO ₂ /year
2022 emissions	60
2030 emissions	58
2030 emission with additional measures	47.5

10.7.1 Proposed development CO₂ emissions.

Using the data from tables 10.3 and 10.4 we have calculated to CO₂ emissions using the same unit (Mt-CO₂/year) as the National CO₂ emission table (10.5) to get a better idea of the actual impacts. For this chapter for now we assumed the emissions of the construction phase to be executed in one year (2022).

Table 10-6. Proposed project CO₂ emissions in 2022 and 2030.

Total project CO ₂ emissions	426 units Construction Mt-CO ₂ /year	426 units Operational Mt-CO ₂ /year	426 units Combined Mt-CO ₂ /year
2022	0.00849	0.00126	0.00976
2030	0.00000	0.00126	0.00126

10.7.2 Effects of the proposed project CO₂ emissions on the national emissions.

Using the data from tables 10.5 and 10.6 we have calculated to CO₂ emissions from the proposed project and compare these with the National (EPA) listed emissions for 2022 and 2030.

Table 10-7. Effect of proposed project CO₂ emissions on national emissions in 2022 and 2030

Project CO ₂ emission impact on National emissions	National	426 units	fraction
	emissions	emissions	
	Mt-CO ₂ /year	Mt-CO ₂ /year	%
2022	60	0.00976	0.01626

2030	58	0.00126	0.00218
2030 with additional measures	48	0.00126	0.00266

The national impact;

The impact of this 426 unit development/phase of 0.00976 Mt-CO2 on Ireland's current emissions (2022) @ 60 Mt-CO2/year represents an increase of 0.01626%.

The impact of this 426 unit development/phase of 0.00126 Mt-CO2 on Ireland's projected 2030 emissions @ 58 Mt-CO2/year represents an increase of 0.00218%.

Based on the above findings we note the impacts on the national CO₂ emission at worse to be very fractional. CO₂ emission from the construction and operational phase have been reduced to a minimum and the impact on National emissions for the construction phase are therefore deemed to be *imperceptible* and *short term* and for the operational phase to be deemed *imperceptible* and *long term* both in 2022 and 2030. Any new development in essence will increase CO₂ emissions to the national and global environment however by introducing the reduction measures at design stage the increase has been kept to a reasonable minimum.

10.8 Mitigation measures.

There are no particular mitigation measures noted. All the recommended reduction measures at design stage and as applied in the CO2 reduction tables are for the greater part mandatory to comply to the relevant regulations and standards. As each development/building can only be certified for compliance under the Building Control Amendment Regulations (BCaR) if the minimum criteria set at design stage is met in full it is very unlikely that non-compliance i.e. mitigation occurs.

11.0 LANDSCAPE AND VISUAL IMPACT

11.1 Introduction

This Landscape and Visual Impact Assessment (hereafter LVIA), prepared by Ronan MacDiarmada & Associates Ltd (hereafter RMDA), and was informed by a desktop study, and a survey of the site and receiving environment in June 2021. The assessment is in accordance with the methodology prescribed in the Guidelines for Landscape and Visual Impact Assessment, 3rd edition, 2013 (GLVIA) published by the UK Landscape Institute and the Institute for Environmental Management and Assessment.

This report identifies and discusses the landscape and visual constraints effects in relation to the proposed development at Kilnahue, Gorey, Co. Wexford. RMDA has been commissioned by the applicants, Gerard Gannon Properties to prepare a Landscape and Visual Impact Assessment to accompany a Strategic Housing Development (SHD) planning application on a site measuring circa 15.3 hectares,(37.8 acres) on lands that are subject to the Gorey Town & Environs Local Area Plan 2017-2023. Kilnahue is in the Electoral Division of Gorey Rural, in Civil Parish of Kilnahue, in the Barony of Co. Wexford in the County of Wexford. The Irish name for Kilnahue is Cill na hUagha.

This assessment should be read in conjunction with Chapter 2 which includes the description of the proposed Project & alternatives considered. Photomontages have been prepared for the scheme which are included in Appendix 11.1 and were prepared by Digital Dimensions, which should also be read in conjunction with this chapter. In addition, please also refer to section 11.10 of this chapter for an assessment of the viewpoints.

The development shall consist of 421 no. residential units, a creche, 2 no. retail units and community rooms, 759 car spaces, on a site located North of the Carnew Road (R725), West of Kilnahue Lane opposite Gaelscoil Gorey and Gorey Educate Together National School. The site is located 2.2 km from the centre of Gorey, once a small village in North County Wexford but now an expanding commuter town to Wexford because of improved road networks (M11).

The proposed residential development at Kilnahue shall form an important and expanding development in this area and shall be consistent with emerging housing patterns in the area.

The proposed residential units shall be characterised by houses, including detached, semi-detached and terraced houses, as well as duplexes and apartments with open spaces, greenways, the retention of existing trees and hedgerows to the perimeter of the site, associated tree planting, roads, driveways, and new boundary treatments. The proposal also includes drainage and SUDS proposals and all associated site development works facilitating the proposed development.

11.1.1 Statement of Authority

RMDA provides specialist landscape and visual services for projects from inception, through site/route selection, environmental impact assessment (EIA) and the planning process, to detailed design and construction. The company specialises in landscape character assessment (LCA) and landscape and visual impact assessment (LVIA) - for a wide variety of projects.



Figure 11-1. Landscape Plan

Ronan MacDiarmada is the chapter's main author, and Martin Redmond provided oversight and review. Ronan MacDiarmada, B.Agr. Sc. (Land. Hort.) is the director of Ronan MacDiarmada & Associates Ltd, and is graduate of University College Dublin. He is a qualified Landscape Architect and a Corporate Member of the Irish Landscape Institute. He has specialised in Landscape and Visual Assessment (LVIA) and has over twenty years' experience in a range of projects, from large scale strategic design, master planning, and detailed design to LVIA and landscape planning, including Strategic Housing Developments throughout Ireland.

11.2 Methodology Used

The Landscape and Visual Assessment Methodology:-

This assessment is based on the following guidelines:

- "Advice Notes on Current Practice in the preparation of Environmental Impact Statements", Environmental Protection Agency (2015)
- "Guidelines on the Information to be Contained in Environmental Impact Statements", Environmental Protection Agency (2002).

- “Draft 2017 EPA Guidelines on Environmental Impact Assessment”, Environmental Protection Agency.
- “Advice Notes for Preparing Environmental Impact Statements” Draft (September 2015)
- “Guidelines for Landscape and Visual Assessment”, 3rd Ed., Landscape Institute and Institute of Environmental Management and Assessment, 2013.

The following Methodology was used in this assessment:

1. A desk top study of the proposed site and its environs, including reviewing aerial photography and ordinance survey documents.
2. A site survey was undertaken to determine the character of the landscape and the surrounding area, including site visits during the month of June 2021
3. An assessment of the proposed development was carried out by examining the layout plans, elevations, and sections to determine the impacts of the development.
4. An evaluation of these impacts was carried out in accordance with the criteria set out in the EPA guidelines.
5. A review of statutory planning and other documentation to ascertain the local and wider significance; and visiting the site and surrounding area during May and June 2021 and preparing a photographic record of views and landscape features.

11.2.1 Definition of Landscape

Ireland is a signatory to the European Landscape Convention (ELC). The ELC defines landscape as ‘*an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*’. This definition is important, as it defines that the landscape is not only a physical and visual amenity but provides for a range of functions: As a cultural resource, the interaction of man and landscape has formed the basis of much of our cultural heritage and values. The rhythms of the land as it was settled has informed what Kilnahue is today. The landscape provides opportunities for passive and active recreation. It contributes to the sense of place, as over time and place various histories and interactions have formed a sense of place for the local populations. The landscape provides a historic record, it also is a resource for food production, sources of energy and in the natural cycle, oxygen, water. as the source for materials for living. In particular the landscape has the ability to renew itself.

Kilnahue and its environs is that of a rural setting and this is defined in GLVIA-2013 in the following manner (Section 2.2): Landscape is about the relationship between people and place. It provides the setting for our day to day lives. The term does not mean just special or designated landscapes and it does not only apply to the countryside

11.2.2 Forces for Landscape Change

The landscape in Kilnahue is not unchanging. It has changed with the settlement pattern over the last several hundred years. It has progressed from wilderness to agriculture and settlement. The patterns of settlement have been driven primarily by economic need and the requirement to provide shelter and a food resource. In this frame, it has to be accepted that change shall occur, and it requires finding an appropriate balance between economic, social and environmental forces and values.

In this, the landscape proposals have focused on the existing hedgerows and the retention and augmentation of same. This is done to minimise visual impact, create and retain existing habitats. It is anticipated to retain the sense of value and place in the location in which local residents work and reside. This shall encourage the growth of community in Kilnahue.

In this the landscape proposals have focused on natural interventions, retention of hedgerows and trees, woodland planting and extensive tree planting, i.e. bringing nature into the urban realm so that the residents may have a sense of value and place in the location in which they reside. This shall encourage the growth of community in Kilnahue.

Climate change was also one of the factors, that informed this proposed design consideration, i.e., the need to mitigate and offset issues associated with urban development. In this, the approach to surface water run-off is integrated with landscape solutions in the SUDS requirements. It was considered very important to be able to manage the water and more extreme weather and rainfall patterns. The use of natural falls, existing ditches, woodland planting, and extensive tree planting, have been adopted as part of this new landscape and is considered to a positive visual impact upon the landscape and the environment.

11.2.3 Nature of Impacts

Impact on landscape arising from development has two distinct but closely related aspects. The first is impact in the form of change to character of the landscape that arises from the excavation of the existing landform and the insertion of the proposed development into the existing context. The second aspect is the visual impact, which depends on the degree and nature of change in the visual environment. It is recognised that the combined impact on character and views will draw responses, the significance of which will be partly informed by an individual's subjective perception of how much the changes matter.

The assessment of landscape/Landscape and visual impacts include:

- Direct impacts upon specific landscape elements and buildings within and adjacent to the site.
- Effects on the overall pattern of the landscape elements that give rise to the character of the site and its surroundings.
- Impacts upon any special features or interests in or around the site.
- Direct impacts of the scheme upon views in the landscape.
- Overall impact on landscape character and visual amenity.

In determining the Visual Impacts, the following definitions were used to assess the significance of the impacts:

11.2.4 Impact Significance Criteria - Table 1

No Impact: There are no changes to views in the visual landscape.

Imperceptible Impact: An impact capable of measurement but without noticeable consequences.

- Slight Impact:** An impact which causes noticeable changes in the character of the environment without affecting its sensitivities.
- Moderate Impact:** An impact that alters the character of the environment in a manner that is consistent with existing and emerging trends.
- Significant Impact:** An impact which, by its character, magnitude, duration, or intensity alters a sensitive aspect of the environment.
- Profound Impact:** An impact which obliterates sensitive characteristics.

Terms used to describe quality of visual impact:

- **Neutral Impact:** A change which does not affect the quality of the landscape.
- **Positive Impact:** A change which improves the quality of the environment or landscape.
- **Negative Impact:** A change which reduces the quality of the environment or landscape.

11.2.5 Terms used to describe the Duration of visual impact - Table 2

- Momentary Effects Seconds to Minutes
- Brief Effects Less than a day
- Temporary Effects Less than a year
- Short-term Effects Lasting 1 to 7 years
- Medium-term Effects Lasting 7 to 15 years
- Long-term Effects Lasting 15 to 60 years
- Permanent Effects Lasting over 60 years
- Reversible Effects Effects that can be undone
- Frequency of Effects Describe how often the effect will occur

11.3 Receiving Environment

11.3.1 Description of the Receiving Environment

The area of the red line of application includes the proposed connections to adjoining lands to the North and West as well as proposed upgrades to the Carnew Road and Kilnahue Lane. The area of the subject four fields, that will accommodate the proposed housing, creche, associated open spaces and site development works etc., is approximately 15.3 Ha hectares. The proposed site lies North of the Carnew Road that connects to the R772 which in turn connects to the M11, an important motorway to Wexford town and Dublin. To the North and West of the development site, lies existing field patterns that remain agricultural, as well as individual houses to the South and East. Just beyond the residential area to the East lies the expanding town of Gorey, and a number of developments.

Currently there a number of old farm outbuildings which have been abandoned for some time on the subject site, that are proposed to be demolished. The lands have rented to a local farmer to keep the land managed and in good order.

This is an area characterised by the expanding village of Gorey to the East, consisting primarily of suburban housing, a busy main street with many shops, large supermarkets, several public houses, church, a large hotel complex i.e. Amber Springs and Gorey Shopping Centre. There are a number of

amenities in the area, Naomh Eanna GAA Club, Gorey Rugby Club and golf courses. The village of Courttown is also close by and is too expanding.

To the North-east of the subject site is the Gorey Town and District Park. Further South is Gorey Business Park a large business park, with international and national businesses residing there. Overall, the lands to the South, West and North are agricultural and have undergone little development the majority of residential and commercial development is to the East.

The subject site is situated on a sloping site, and as such the land falls away quickly from the northern boundary to Carnew Road. With a contour of 133.5m OD at its North-west corner, falling quickly to a contour of 102m OD, a fall of 32.5m to the Southern boundary. There is a considerable fall across the lands, but it is visually screened by existing hedgerows and trees around the perimeter.

The proposed development site has an open character combined with large field patterns with tree belts and hedges. It has two lengths of native hedgerows and trees internally running in a North east - South west direction along with further hedgerows to the exterior of the subject lands,

To the East of the site, is a newly constructed educational area consisting of both primary and post primary schools. That serves the local area has been constructed and finished, There is the district park for the local area and is known as Gorey Town and District Park, serving the amenity needs of the local population. Further East, is the district centre for the local area Gorey Main Street and a Shopping Centre.

Gorey Town and District Park is an important amenity, providing recreational value, playgrounds, skatepark, paths and green space for the local population. It is accessible from the pedestrian link on the Southern boundary of Gaelscoil Moshíológ school development past Creagh College and onto Pearson's Brook which has connections to Gorey Town. It is a park managed by the local authority, Wexford County Council for the amenity of the population of the area.

11.3.2 Landscape Type - Characteristics of the Proposed Development



Figure 11-2. CGI - Proposed Site Entrance

The proposed scheme involves the development of a wide variety of dwelling types for the expanding Kilnahue area, the Town of Gorey, the increasing population of Wexford County and its immediate environs.

The access to the site shall be directly from the Carnew Road and Kilnahue Lane, with proposed vehicular connections. Pedestrian and cyclist connections are also proposed from the subject site onto Kilnahue Lane as well as pedestrian and cyclist connections onto the Carnew Road.

It is intended that the site shall retain much of the existing native trees and hedgerows to the exterior. On completion of the residential development, it shall be landscaped to a very high standard, with tree planting and paving that characterise the external open spaces and feature a high standard of landscape development. The open spaces shall contain, green areas, paths, play areas and extensive tree, woodland, meadow and bulb planting.

A link along Kilnahue Lane on the North eastern boundary shall be provided for in the form of a public path and cycleway into both the development and proposed public park. The paths within the park will connect to the rest of the development to the South and shall bring a unique character retain to the scheme, i.e. that of hedgerow and trees, with associated habitat.

Although works shall occur in the construction of the dwellings, much of the character of the site at present shall be retained. The open space to the North of the development, as well as open spaces within the development, shall be made available to the public from the wider area and the adjoining housing developments to the East, i.e. Gorey Hill and Creagh Hill respectively.

The soft landscape proposals shall compliment the development aesthetically and functionally and shall tie in with the existing and surrounding landscape. The proposed and existing trees, hedges and shrubs shall position the development into the landscape and provide a large element of screening. It is intended to tie in with and blend the development into the local landscape befitting of its semi-rural context merging into an established urban background.

In landscape terms the proposed development will have the following objectives:

1. To renew and augment existing vegetation with planting suitable to the local and new proposed environment.
2. To create new landscape features that will complement and enhance the landscape.
3. To provide a new landscape feature in the form of a housing development that will significantly enhance and retain the character of the area.

11.2.3 Policy Context of Receiving Environment

The following section includes policies and objectives from the Gorey Town & Environs Local Area Plan 2017-2023 (hereafter referred as the LAP) which relate to the site, including policies relating to the core strategy, landscape, views and prospects, and green infrastructure. The Plan includes policies relating to landscape character, protected views, and general landscape policies, whereas the LAP includes more specific policies for the vicinity of the proposed development site.

11.2.3.1 **Gorey Town & Environs Local Area Plan 2017-2023**

3.1 Introduction

Urban design is an important aspect of local area planning. It is a process that brings together the social, economic, and environmental dimensions and aspirations of urban planning and places them within an integrated, spatial strategy.

3.2.4 Landscape Structure

Although the landscape surrounding the town has distinctive qualities and character, the landscape within the town is weak and largely incoherent. Overall, the structure of public open spaces in Gorey is weak, with few corridors providing biodiversity, amenity or water management functions. The lack of continuous walking or cycling routes for amenity in Gorey is apparent.

3.3 Urban Design Strategy

The overall urban design strategy for Gorey comprises spatial concepts for the development of Gorey. It comprises a place concept, which shows the longer-term development of places or small local centres, a route concept, showing the longer-term hierarchical structure of routes, and a landscape concept, which shows the longer-term network of open space corridors and hubs.

3.3.1 Place Concept

3.3.2 Route Concept

3.3.3 Landscape Concept

3.3.4 Implementation

3.4 Urban Design Objectives

Objective UD01: “To require planning applications to demonstrate compliance with the Neighbourhood Framework Plan within which the subject lands are located. It must be demonstrated that the development will deliver the main components and objectives of each Neighbourhood Framework Plan with regard layout, form, density, linkages, infrastructure, open space provision and key infrastructure provision. Where a deviation from the framework is proposed, it must be demonstrated that the development does not compromise the delivery of the components or objectives of the Framework.”

Objective UD02: “To require development to demonstrate compliance with the Urban Design Strategy and the Urban Design Guidelines contained in Appendix 1.”

Objective UD03: “To encourage innovation in the built environment and to ensure that high quality urban design and architecture is carried out in accordance with the guidelines contained in this LAP along the Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas, its companion document Urban Design Manual (DEHLG, 2009), the Design Manual for Urban Roads and Street (DTTS and DECLG, 2013), the Architectural Heritage Protection - Guidelines for Planning Authorities (DAHG, 2011) and the National Disability Authority (NDA) Buildings for Everyone: A Universal Design Approach.”

Section 5 Greener Gorey- Open Space, Recreation and Green Infrastructure Strategy

5.1 Background

High quality open space and recreation areas play an important role in developing sustainable communities and contributing to quality of life and well-being while also playing a vital role in developing and strengthening a sense of community. In order for open spaces to be successful, they must be well located and designed, overlooked and accessible to all. Open space has a variety of functions including passive recreation, active recreation, visual amenity, ecology, drainage and socio-economic needs and comes in a variety of forms including parks, playgrounds, playing fields, walks and trails.

Green Infrastructure (GI), which is a network of green spaces that connect ecosystems, is important for biodiversity and provides benefits for humans. A well-designed GI network helps to create a high-quality environment which will provide economic benefits, provide high quality open spaces with associated health and social benefits for people through the provision of play areas, safe and attractive areas and routes for meeting, walking and cycling. It provides opportunities and space for contact with nature which is considered essential for good health and wellbeing. It also provides efficient and sustainable surface water drainage systems and helps communities to adapt to the impacts of climate change and flooding. The Council is committed to ensuring that Gorey Town and Environs has a high quality network of open spaces, recreation facilities and GI, which together will contribute to the making the town an attractive place to live, work and visit.

5.2 Existing Open Space, Recreation and Green Infrastructure

Gorey has a variety of open space and recreation areas ranging from open spaces within residential estates, the Town Park and sports and leisure facilities to excellent natural amenities on its doorstep such as a 'blue flag' beach and woods in Courtown, Ballymoney beach and Tara Hill. The existing open space provision in the plan area is described in the Urban Design Strategy under 'Landscape Structure', the main elements of which are:

- Gorey Town Park and Showgrounds
- Ramsfortpark Forest
- The Banoge River and its tributaries
- Existing sporting facilities and playing pitches
- Local level open spaces
- Radial routes and country roads

The Council, together with Gorey Tidy Towns, local businesses, community and voluntary groups, have been active in developing and managing small valuable urban amenity areas and green spaces in the town. These consist of urban planting and minor streetscape and approach road improvements where innovative landscaping has been used to enhance the urban environment and add significantly to local habitat and biodiversity value. Such projects include:

- The Urban Park at the Civic Square.
- The re-development of The Avenue
- The Magic Garden on the Coach Road

- The Magic Woodland on the Arklow Road
- The Magic Compass on McCurtain St
- Gorey Heritage Orchard
- The Paul Funge Boulevard wildlife corridor
- The landscaping of roundabouts in and around the town

With regard to active recreation much of the space used for sporting activities belongs to privately managed clubs and organisations, such as the GAA, rugby, soccer and tennis. These, together with the local schools, provide invaluable facilities for the residents of the town and the wider District.

5.3 Greener Gorey 2023

‘Greener Gorey 2023’ is the open space, recreation and GI strategy for the plan area, and it is focused on developing a hierarchy of accessible open spaces which can be used by all members of the local community. It recognises that the various groups in the community have different needs in relation to open space and recreation from playgrounds, Multi Use Games Areas (MUGAs) and sporting facilities to walking, cycling, and jogging. The ‘Greener Gorey’ strategy is derived from the following:

- An audit of the existing open space provision which identified deficits and opportunities for improvement at all levels in the open space hierarchy. The audit identified deficits at neighbourhood level and that the main open space in the Town Park would benefit from significant upgrading. Quality parkland provides invaluable amenity space for everyone, particularly those without the means to travel to other types of recreational facilities.
- The need to provide access to high quality neighbourhood and local parks within a short walk of the majority of dwellings in that area
- A requirement that public open space should be provided at a minimum rate of 15% of the total site area of development land
- A lack of permeability between existing developments and future development lands.
- A recognition that open space is a good way to integrate old and new developments.
- The consideration that sport facilities are well provided for in the town.

The strategy, which is illustrated on Figure 30 is focused on the following hierarchy of spaces:

1. Hub Open Spaces
2. Neighbourhood Parks
3. Pocket Spaces
4. Education Spaces and Sporting Facilities
5. Amenity Walks, Green Corridors and River Corridors

5.3.1 Hub Open Spaces

These are the highest level of open spaces and provide for a wide range of uses at strategic, accessible locations in the plan area. The spaces are intended to be destinations for all residents in the town. Three key sites have been identified:

Gorey Town Park: The planning process has been completed for the re-development of Gorey Town Park and Show grounds into a high quality public park and recreational area. The park will consist of a series of safe interlinked spaces and open playing fields to be used for passive and active recreation

and will also function as a conduit for raising awareness of wildlife, habitat, environmental and sustainability issues. The Park will also be capable of hosting small outdoor and local events. Preliminary design works are due to commence in September 2016 with construction to follow in 2017. The new park layout is illustrated in Figure 31.

Ramsfortpark Forest: Ramsfortpark Forest currently consists of 36.5 ha of afforested lands. In consultation with Coillte and local interest groups, the Council would see these lands develop into a unique amenity and destination area for all users of the town. Examples of proposed uses could include woodland walks, bike trails, adventure runs, weekly park runs, biodiversity and education trails.

Clonattin Park: A new hub park has been identified on the eastern side of the town at Clonattin which will facilitate the needs of existing and new residents in the area as well as other users in the town. The Park will accommodate formal and informal play areas, a new playground, passive recreation areas, biodiversity areas and riverside walk. Part of this park will be delivered in tandem with housing developed on the residential zoned land. The 'linear' section of this park will be delivered in tandem with the development of the lands zoned for business and technology and tourism and leisure in this area.

Objective OS01: "To support the development of Gorey Town Park, Ramsfortpark Forest and Clonattin Park for high level recreational and amenity uses. The delivery of Gorey Town Park and Ramsfortpark Forest will be supported through the Development Contribution Scheme. Clonattin Park will be delivered in tandem with the development of the residential and the business lands in this area."

5.3.2 Neighbourhood Parks

The second level of open space provision, neighbourhood parks, are based on the principle of having a high quality open space for residents located within a ten-minute walk of the majority of dwellings in the area. It is important that these spaces are of an appropriate size in order to be useful and as such neighbourhood parks should be between 1ha-2ha in size.

5.3.3 'Pocket' Open Spaces

The remaining 5% public open space must be provided by means of pocket parks within the development. A lower level of open space provision but none the less a vital component of successful neighbourhoods, pocket open spaces can provide play areas for smaller children but not necessarily formal play areas. They have an important visual and social function and should not be located to the rear of dwellings. It is essential that pocket parks are well located within developments, are adequately overlooked and protected from vehicular traffic.

5.3.4 Merging and Linking Open Spaces

Open space is an excellent way of integrating new and older developments. The Council will encourage new developments to merge open spaces with existing development where possible. This will be mutually beneficial providing spaces which are large enough to be usable while increasing permeability. It could be delivered through the provision of an attractive, safe pedestrian linkage to the adjoining new open space development. This approach can be achieved through successful community consultation and involvement.

5.3.5 Design of Public Open

Spaces Open spaces must be designed and laid out to a high standard and an emphasis must be placed on the quality and long term sustainability of the open space. Details of the proposed landscaping (both hard and soft) of these spaces will be required at the planning application stage.

Objective OS02: “To require a 15% provision of the overall site area for use as public open space in new residential schemes. This open space shall be provided as set out in Sections 5.3.2 Neighbourhood Parks and 5.3.3 Pocket Parks.”

5.3.6 Education Spaces and Sporting Facilities

Gorey is home to a wide range of sports such as the GAA, rugby, soccer, hockey and tennis all of which provide an invaluable recreational outlet for the residents of the town. Opportunities exist to develop and share existing facilities and the further use of schools facilities could provide a key role in this regard. The Council will support the development of such facilities where required.

5.3.7 Amenity Walks, Green

Corridors and River Corridors Amenity walks and green corridors are linear open spaces along paths, watercourses, planting or other natural features that provide opportunities for walking and cycling, informal recreation, biodiversity and wildlife migration. Article 10 of the Habitats Directive outlines the importance of green corridors and requires that they are protected in order to ensure the continued migration of species and genetic diversity throughout the area.

Objective OS03: “To have regard to the ‘Planning for Watercourses in the Urban Environment Guidelines’ (Shannon Regional Fisheries Board) when considering development proposals in the vicinity of rivers and streams within and adjoining the plan area.”

Objective OS04: “To ensure riparian buffer zones, a minimum of 10m in width (in some cases buffers zones up to 50m may be appropriate), are created between all watercourses and any future development. In considering the appropriate width, the Council will have regard to ‘Planning for Watercourses in the Urban Environment Guidelines’ (Shannon Regional Fisheries Board).”

Objective OS05: “To only consider proposals for culverting/piping of streams and watercourses where these works are deemed absolutely necessary and appropriate. Inland Fisheries Ireland (IFI), National Parks and Wildlife Service (NPWS) and the Office of Public Works (OPW) will be consulted, where appropriate.”

5.4 Play Facilities

The Council will require the provision of suitably designed and landscaped play areas in new residential estates. Playground facilities should cater for defined age groups and provide for a variety of facilities and play opportunities. Play areas should be located where they are overlooked and do not create an unreasonable nuisance to residents. Play facilities should be fully inclusive and accessible to all children.

Objective OS06: “To require high quality landscaped areas with play facilities within new residential developments of 50+ residential units as detailed in accordance with the standards contained in Section 5.4.1. Details of proposals shall be submitted with the planning application.”

Objective OS07: “To target underutilised play for improvement or replacement, subject to the availability of the necessary resources.”

Objective OS08: “To encourage and provide Multi-User Games Areas (MUGAs) at appropriate locations within the plan area.”

Section 9 Heritage - Recorded Monuments in the Plan Area

There are several protected structures in the locality and there is one (1) Recorded Monuments Record (SMR) adjacent to the subject site and one (2) Newly Identified Archaeological Site nearby.

- WX006-062 Holy Well

Newly Identified Sites in the Plan Area:

- WX006-093 Burnt Mound

11.2 Land Use Zoning Objectives

The site is zoned Residential (R). ‘To protect and enhance the residential amenity of existing and developed communities and to provide for new residential development, associated residential services and community facilities.’

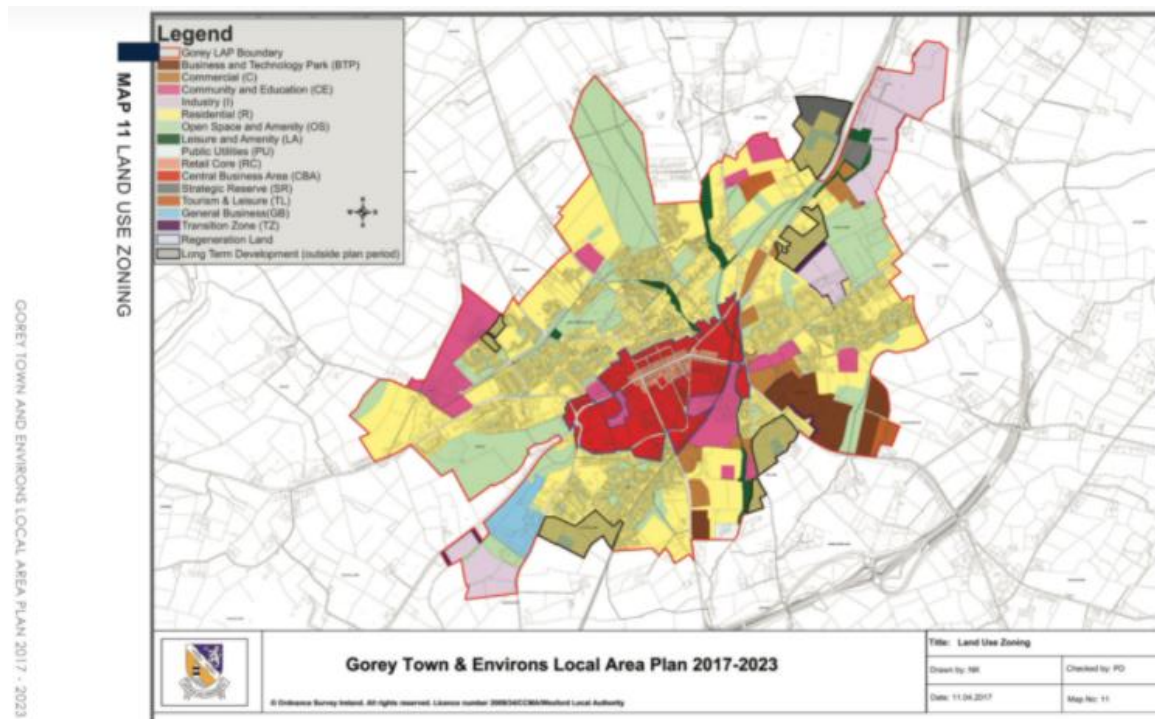


Figure 11-3. Land Use Zoning (Source Gorey town & environs local area plan 2017-2023 Map 11)

11.3 Summary of Landscape Characteristics and Values

11.3.1 Landscape Values

The GLVIA Guidelines sets out the methodology for assigning landscape sensitivity. This is based on combining judgements on landscape value, and landscape susceptibility.

Landscape values are derived from both indications of value as seen in national and local policy, as well as other indications that a landscape or landscape element, is valued. The LAP has designated the site for residential development along with open spaces. The site is not covered by any landscape designations.

In addition to formal designations at international, national and local level, the GLVIA refers to criteria which can help to describe landscape values in landscapes that are not covered by designations. These include the following:

Landscape Quality/Condition: The quality of the landscape and the condition of individual elements is considered to be good. The tree survey indicates the majority of the hedgerows on site are of moderate quality, typical native hedgerows. There are a number of mature trees located within existing hedgerows, there are groups of trees that are encroaching from the existing hedgerows due to inactivity on the site.

Cultural Heritage/Conservation value: There are no sites recorded on the Sites and Monuments Record (SMR) within the plan area. there is one (1) Recorded Monuments Record (WX006-062 Holy Well) adjacent to the subject site and one (2) Newly Identified Archaeological Site nearby (WX006-093 Burnt Mound)

Aesthetic/Scenic Quality: The site has mature hedgerows and tree lines and semi natural grassland which give a pleasant open visual quality to the site. However, the site and context are not considered to have an overall high quality of visual amenity.

Perceptual aspects: A landscape may be valued for its perceptual qualities, such as wildness or tranquillity. The site is an area of pastureland adjacent to a built-up area with no particular perceptual aspects, and while pleasant and pastoral in sections, without a sense of wildness or tranquillity.

Public Accessibility and Recreation Value: The site is in private ownership and not publicly accessible. These values can further be categorised in two ways - values which should be conserved, and those that provide opportunity for enhancement. It is proposed to reinforce and manage the existing inventory of natural habitats, i.e. perimeter hedgerows.

11.3.2 Conservation Values

The conservation values indicate those aspects of the receiving environment which are sensitive and could be negatively impacted on by the proposed development. These values form the potential landscape and visual constraints to the proposed development. These include:

- Relatively open, undulating character.
- Trees and hedgerows contribute to the character of the site and shall be retained where possible.

Calcareous grassland on site shall be retained and augmented with the introduction of wild meadow and wildflower mixes suitable for the existing soil type.

14.3.3 Enhancement Values



Figure 11-4. CGI - Proposed Central Open Space with Natural Play-ground

The enhancement values reflect change that is occurring in the landscape and its inherent robustness. These include:

- The land is zoned for development and there is an opportunity to create a positive frontage onto Carnew Road and Kilnahue Lane as well as a positive interface with the surrounding built up areas;
- Improve boundary treatment - the boundary around the park will be augmented to create a new landscape buffer. The boundary treatment at the back of units and in other locations will be sensitive to existing hedgerows.
- The street hierarchy shall be of a high quality leading to greater sense of place and to a greater sense of well-being.
- Opportunity to increase permeability with adjacent built-up areas. The proposed circulation has been devised to provide access throughout the development and into adjoining access points, greenways and public paths and roads.
- Opportunity to provide ecological enhancement with any new development. This shall include the planting of a large number of trees, far in excess of the existing number on site. The retention and augmentation of existing hedgerows, and the hedgerows shall be managed to ensure that they shall survive into the future;
- The open spaces shall be developed with habitat renewal to the fore, it is proposed to retain the grassland native to the location. This shall be augmented by wild meadow grasses and wildflower mixes. Bulb planting to aid pollination is also proposed.

11.4 Characteristics of the Proposed Development



Figure 11-5. CGI - Proposed Streetscape Character

The development proposal consists of the construction of a residential development of 421 no. dwellings and a creche, after creche, 2 no retail units and community rooms, as well as open spaces, and all associated site development works.

Access to the subject site will be from the Carnew Road & Kilnahue Lane, as well as pedestrian and cyclist connections directly onto Carnew Road & Kilnahue Lane.

It is intended that the site shall retain many of the existing native trees and hedgerows to the perimeter. Upon completion of the development, there shall be a very high standard of landscaping, with tree planting and paving that shall characterise the external open spaces and shall feature a high standard of landscape development. The open spaces shall contain, green areas, paths, public plazas, and extensive tree, shrub, wildflower and bulb planting.

Many of the proposed species will be pollinator friendly in order to create biodiversity within the scheme. The range of plants have been taken from the All-Ireland Pollinator Plan 2021 – 2025.

Although the existing green fields and some internal vegetation shall be removed in the construction of the development, much of the character of the site at present shall be retained with the retention of the key perimeter hedgerows, that shall be protected and kept in order to add to the appearance of the development.

The soft landscape proposals shall compliment the development aesthetically and functionally and shall tie in with the existing and surrounding landscape. The proposed and existing trees, hedges and shrubs shall sit the development into the landscape and provide a large element of screening. It is intended to tie in with and assimilate the development into the local landscape befitting of its suburban background, as follows:

1. To retain and augment existing vegetation with planting suitable to the local and new proposed environment.

2. To create new landscape features that will complement and enhance the Landscape.
3. To provide a new landscape feature in the form of a development that will significantly enhance and retain the character of the area.

11.5 Analysis

11.5.1 Potential Visual Impact of the Proposed Development



Figure 11-6. CGI - Proposed Roadway Character

The visual impacts of the proposed development on the landscape are considered in the context of the construction and operational stages. Generally, the development shall reduce the amount of green space, replacing it with the proposed units, and associated walls, roads, and driveways.

The space that is being removed is a number, or part of fields with hedgerows and trees as boundaries.

The main visual changes shall be the height and the extent of the proposed residential development and associated building works to the landscape. The development shall be located on rising contours which shall increase its visual impact, notably from the visual receptors directly north and south of the site.

The design and organisation of the open space shall ameliorate the impact of this development and of this decrease in spatial area. This shall be aided through provision of extensive semi - mature tree planting, native hedge planting and mounding. The hedge and tree planting shall position the housing into the landscape as per the proposed landscape design.

The lines and the height of the buildings shall be visually reduced through the retention of existing trees and hedgerows, the proposed use of more soft landscape materials shall further reduce the impact of the development.

Semi - mature trees and shrub planting shall give an immediate effect tying in with the surrounding landscape. The visual impact of the landscape intervention on the existing development shall be positive and long term, the impact on the agricultural nature of the surrounding landscape shall be moderate in the long term.

The overall impact with the existing housing estates and encroaching town of Gorey to the east shall be moderate in the short term, and moderate to neutral to the long term.

11.5.2 Visual Impact of the removal of the site vegetation

During the construction stages traffic movement, excavation operations and construction works shall have a significant visual impact on the site. There may be some significant visual impacts during the construction stage.

Grass forms the groundcover over a portion of the site with native hedges and trees providing screening and boundary treatment.

The removal of the grass will be necessary for the development to commence. The existing native hedge and tree line to the Carnew Road and Kilnahue Lane shall be removed due to the requirement to upgrade the roads through the provision of a path along the road.

Although the portion of 'Green' land will be reduced, no loss of botanical significance shall be incurred, however, the native hedge line and some mature trees shall be removed. The visual impact upon the area shall be significant to the short to medium term, in close proximity to the site. The extensive landscape programme of planting of trees, hedges and woodland shall provide screening and reduce the impact. The maturing of these landscape elements shall provide a positive long-term impact.

11.5.3 Visual Impacts due to introduction of new structures & buildings



Figure 11-7. CGI - Proposed Streetscape Character

The introduction of the proposed buildings shall be the vertical elements of the proposal. However, existing trees and hedgerows shall reduce the visual impact as it has established vertical elements, i.e. trees. The main visual impact shall be the mass of the proposed structures.

The new structures and associated works will reduce the amount of current open space and remove several trees and hedgerows internally.

The proposed development will require regrading of the site. In the short term and long term, the visual impact of the development will be Significant, due to the level topography of the site and the

proposed extensive landscape development, utilising existing vegetation and proposed new trees and planting.

11.5.4 Visual Impacts due to access roads



Figure 11-8. CGI - Proposed Feature Entrance

The entrance and access road shall be from existing roads and shall follow the contours of the land when entering the scheme. The cut and fill required within the development shall have a significant visual impact, however, the planting and landform grading shall ameliorate this impact to a moderate visual impact.

The positive outcome of rising contours is the need to organise the roads into shorter lengths contributing to the reduction of long visual lines to the houses internally.

Internally there shall be a hierarchy of roads with associated details. The roads shall be heavily planted with semi mature trees and hedges, reducing the impact of the road on the environment.

11.5.5 Visual impacts due to telecommunications/power lines

On this site, the development shall be served from existing services, telecommunications, and power lines. The services on site shall be underground. The opportunity to organise and reduce the telecommunication and services shall be utilised to reduce the visual impact, if any of the development.

11.5.6 Visual Impact of lighting

The lighting of the new development shall be limited and shall be typical of a similar scheme with roads, footpaths, carparking and the main open spaces lit up by the overspill of street lighting.

Internally the roads and streets shall be lit by individual columns, which shall visually change the character of the landscape. Therefore, the impact of lighting on the existing landscape shall be negative in the short term, moderate in the medium term and shall become neutral in the medium term to long term.

The lighting of the new houses shall be limited and shall be typical of a housing development. The existing road has established lighting levels, which the proposal shall not increase dramatically.

11.5.7 Visual Impact of Landscaping Proposals

The landscape proposals shall consist of retention of much of the existing perimeter planting, new planting of a variety of tree species, including native trees, being introduced along with shrubs in specified areas. These proposals shall enhance the landscape character of the development. The site will change from an agricultural use to a completed residential development with an associated landscape scheme.

The landscape scheme shall impact on the development in a positive way, working with the landscape using and retention of trees and hedging to create an environment maintaining desirable aspects of the existing landscape and accentuating them through introduction of new elements.

The current street frontage of the existing hedgerow shall be replaced by a tree and native hedge planting along with new feature walls and piers. The new street frontage shall provide an ordered and a boundary that is in keeping with the landscape.

There shall be an increase in the species and varieties of plants, notably trees on the existing landscape which was primarily a monoculture of grass.

The landscape proposals shall include for a range of pollinator plants, trees, hedges, and shrub planting. The flowering of these plants shall enable bees to flourish but also increase the texture and colour in the landscape. This shall be a positive and long-term visual impact.

11.5.8 Potential Visual Impact of the Proposed Development



Figure 11-9. CGI - Proposed Planting Character

The proposed development respects the natural attributes of the site, retaining the existing perimeter hedgerows, notably the hedgerows to the Southern boundary to the back of existing residential units and garage.

The perimeter hedgerow, although limited in quality in places, shall be respected in the most part with replacement native hedging and trees. The hedgerows shall form an important buffer that shall be open to the public, to access the Carnew Road from the South, with the access from Kilnahue Lane on the North east boundary.

In terms of development, this proposal, by respecting the natural hedgerows and trees, provides a positive visual impact to the area.

There shall be new homes with a landscape scheme, both hard and soft, accompanying them to provide a highly developed and coherent design.

The proposed house, driveway, parking and planting shall be clearly identified and developed in an organised manner.

The potential visual impact shall be negative in the short term and shall change to neutral /positive development in the long term, as new housing is developed, mostly from the Northern end Southern receptor view locations.

The development shall therefore be a maturing site, becoming increasingly knitted to the fabric of the landscape in this area, which in isolation has a suburban and isolated rural feel but increasingly urban to the South and West.

The retention of existing hedgerows and the planting of trees and shrubs shall mitigate the impact of the dwellings providing an organised and well-developed housing in the landscape. The planting shall provide visual relief and add to the amenity of the current landscape. It shall have a negative impact in the short term on the surrounding landscape. However, after the homes have been lived in for a significant period, the upgrade and improvement of the external spaces shall have a positive impact on the landscape and reduce the visual impact upon nature of the location.

11.6 Potential Cumulative Impacts

Cumulative effects are considered as those effects which result from additional changes caused by the proposed development in conjunction with other similar developments. The list of projects considered in the cumulative assessment is included in Chapter 3 of this EIAR.

There are a few housing developments to the East of the proposed development, but the proposed development shall be carried out over a period of time therefore the cumulative impact shall be over a period of time depending on the phasing.

During the construction stages, traffic movement, excavation operations and construction works will have a slight impact on the site. There may be some moderate - significant visual impacts during the construction stage.

Existing agricultural lands form the groundcover over the site with native hedges and trees providing screening and boundary treatment. These lands at present have a limited function, providing use for a local farmer. Therefore, functioning as agricultural use and the future development of the site for residential land use will have a moderate - significant visual impact.

The removal of the existing agricultural lands will be necessary for the development to commence. Lengths of the native hedge and tree lines within the development are to be removed to accommodate both roads and residential units with adequate slopes throughout the development.

Although the portion of 'Green' land will be reduced, no loss of botanical significance shall be incurred, however, the native hedge line and some mature trees shall be removed as per the arborist and ecological reports. The visual impact upon the area shall be Significant to the short term. The planting of the urban forest and the significant tree planting programme in both the streets and open space shall exceed the current number and species range of existing hedgerow and trees, therefore the visual impact should be mitigated and the long-term visual impact shall be positive.

11.6.1 Operational Phase Cumulative Landscape Effects

The cumulative landscape effects of the development may result in Slight to Moderate, adverse effects on the wider landscape at Kilnahue, as the land will change from open fields to built-up areas, with potential loss of landscape elements such as vegetation and hedgerows which define the field patterns.

The subject lands have been zoned for residential land use in the County Development Plans, identifying the application site being developed for housing as part of the "Kilnahue Neighbourhood". Therefore, the CDP clearly envisage residential development of considerable size on the subject lands. The development of the site is consistent with the CDP zoning. The cumulative effects of the development of the entire lands would depend on the nature, scale, and design of those developments to the East. However, the potential cumulative landscape effects of the proposed development, in conjunction with the development of lands within the area, may have a moderate effect on the landscape in the environs of the site.

11.6.2 Operational Phase Cumulative Visual Effects

Based on the Viewpoints 1, 2, 3, 5, 6, 7 and 8 it is not likely that any development would be visible in the aforementioned viewpoints.

The extensive planting, retention of trees and hedgerows, particularly at the perimeter of the development shall reduce the visual impact of the proposal. Combined with the existing houses that are already present to the south, the impact shall be positive in the long term.

11.7 Predicted Visual Impact of the Proposed Development

11.7.1 Construction Phase

During the construction of the development, the area shall be changed from agricultural fields to a residential development. The introduction of the built structures, driveways boundaries and landscape will be carried while maintaining the existing hedge and trees along the centre of the site.

Tree protection shall be provided to retain the character of the existing trees and hedge.

The development shall be carried out in an organised basis, thus reducing the visual impact upon the environment; however, the impact on the initial area of construction shall be moderate to significant.

The retention of the hedgerows, surrounding the site shall reduce the visual impact of the proposal during construction. The requirement to remove the front boundary hedge shall be significant visually in the short to medium term

As the development increases and phasing continues, the improvement, growth and maturity, in terms of the landscape elements, trees, hedges and shrubs, shall reduce the visual impact. In the long term, it will be moderate to neutral, as other existing housing developments and Gorey Town grow to meet this area.

The greatest impact shall be the views through the site as they will become determined by the existing landscape elements of walls, trees and hedges.

As existing hedges and trees are being retained and augmented by the introduction of new trees and planting, the predicted impact during construction shall be significant in the short-term depending on the length of time on site. The tree planting programme shall increase the number and species range of trees on site, providing a long-term biodiversity and positive visual impact of the long term.

11.7.2 Operational Phase

Initially, on completion of the development, the introduced shrubs will be at early stages of establishment and the street trees shall be semi-mature at planting. As time progresses, the plants and trees, notably the woodland trees, will grow and stabilise in their new environment creating better defined avenues and spaces.

The number and quality of landscape elements shall be an addition to the built environment of Kilnahue and Gorey providing quality amenity for the residents.

The extensive development of the external spaces shall provide an improvement on the existing landscape. The ordered design shall be visually positive and long term. The visual impact on the surrounding landscape shall be slight and moderate in the short term and with maturity of the trees, hedges, and plants it shall be neutral to positive in the long term. It is proposed to increase the biodiversity of the area by sowing wildflower and meadow mixes along with tree planting which shall all provide a positive long term visual impact.

11.7.2.1 **Parking**



Figure 11-10. CGI - Proposed Roadway and Parking Bay

The entrance roadways have been designed not to have a visual link from the road to the proposed houses, in part due to the topography. The parking areas shall be screened by new hedges, new and existing trees. The visual effect shall be moderate to significant in the short term and positive in the long term.

11.7.2.2 **Waste handling areas**

The bin storage of an individual house shall be to the rear as this shall be typical of a housing development. The apartments/duplex units shall have their waste handled by a management company and shall be centralised in designed bin stores. Visually the bin store will be as the building and shall be screened by planting thus reducing any negative impact.

11.7.3 **Residual Impact**

Initially, on completion of the development, the introduced shrubs will be at early stages of establishment, the trees shall be semi mature at planting. As time progresses, the plants and trees will grow and stabilise in their new environment creating better defined avenues and spaces.

The number and quality of landscape elements shall be an addition to the built environment of Kilnahue providing quality amenity for the residents.

The extensive development of the external spaces shall provide an improvement on the existing landscape. The ordered design shall be visually positive and long term. The visual impact on the surrounding landscape shall be negative and moderate in the short term and with maturity of the trees, hedges and plants it shall be moderate to neutral in the short to medium term. The long-term residual visual impact shall be positive due to the tree planting.

11.7.4 **Do Nothing Impact**

Should the development not proceed it is likely that the site would remain in its present state, a field system. In this field system the hedgerows will outgrow themselves if not maintained and fall into disrepair over time they would outgrow the hedge reducing the boundary to large trees with briars therefore the hedgerow would disappear. In the grass land areas the pioneer trees and scrub would

take over making it impenetrable for active or amenity use. The proximity of this development to a built up area may lead to antisocial behaviour. The organised and well planned layout of the development would be more visually attractive and positive in the long term. The landscape buffer and hedge and tree planting would not occur in an organised manner leading to a haphazard and visually impenetrable amenity.

11.8 Landscape Impact Assessment Criteria

The following criteria are considered, when assessing the potential impacts on the landscape resulting from a proposed development:

- Landscape/Landscape character, value and sensitivity.
- Magnitude of likely impacts.
- Significance of landscape effects.

The sensitivity of the landscape to change is the degree to which a particular setting can accommodate changes or new elements without unacceptable detrimental effects to its essential characteristics. Landscape/Landscape Value and Sensitivity is classified using the following criteria set out in Table 11.1.

Table 11-1. Landscape/Landscape Value and Sensitivity - Magnitude of Change

Sensitivity	Description
Very High	Areas where the Landscape character exhibits a very low capacity for change in the form of development. Examples of which are high value townscapes, protected at an international or national level (e.g. World Heritage Site), where the principal management objectives are likely to be protection of the existing character.
High	Areas where the Landscape character exhibits a low capacity for change in the form of development. Examples of which are high value townscapes, protected at a national or regional level, where the principal management objectives are likely to be considered conservation of the existing character.
Medium	Areas where the Landscape character exhibits some capacity and scope for development. Examples of which are townscapes, which have a designation of protection at a county level or at non-designated local level where there is evidence of local value and use.
Low	Areas where the Landscape character exhibits a higher capacity for change from development. Typically, this would include lower value, non-designated townscapes that may also have some elements or features of recognisable quality, where management objectives include, enhancement, repair, and restoration.
Negligible	Areas of Landscape character that include derelict sites and degradation where there would be a reasonable capacity to embrace change or the capacity to include the development proposals. Management objectives in such areas could be focused on change, creation of Landscape improvements and/or restoration.

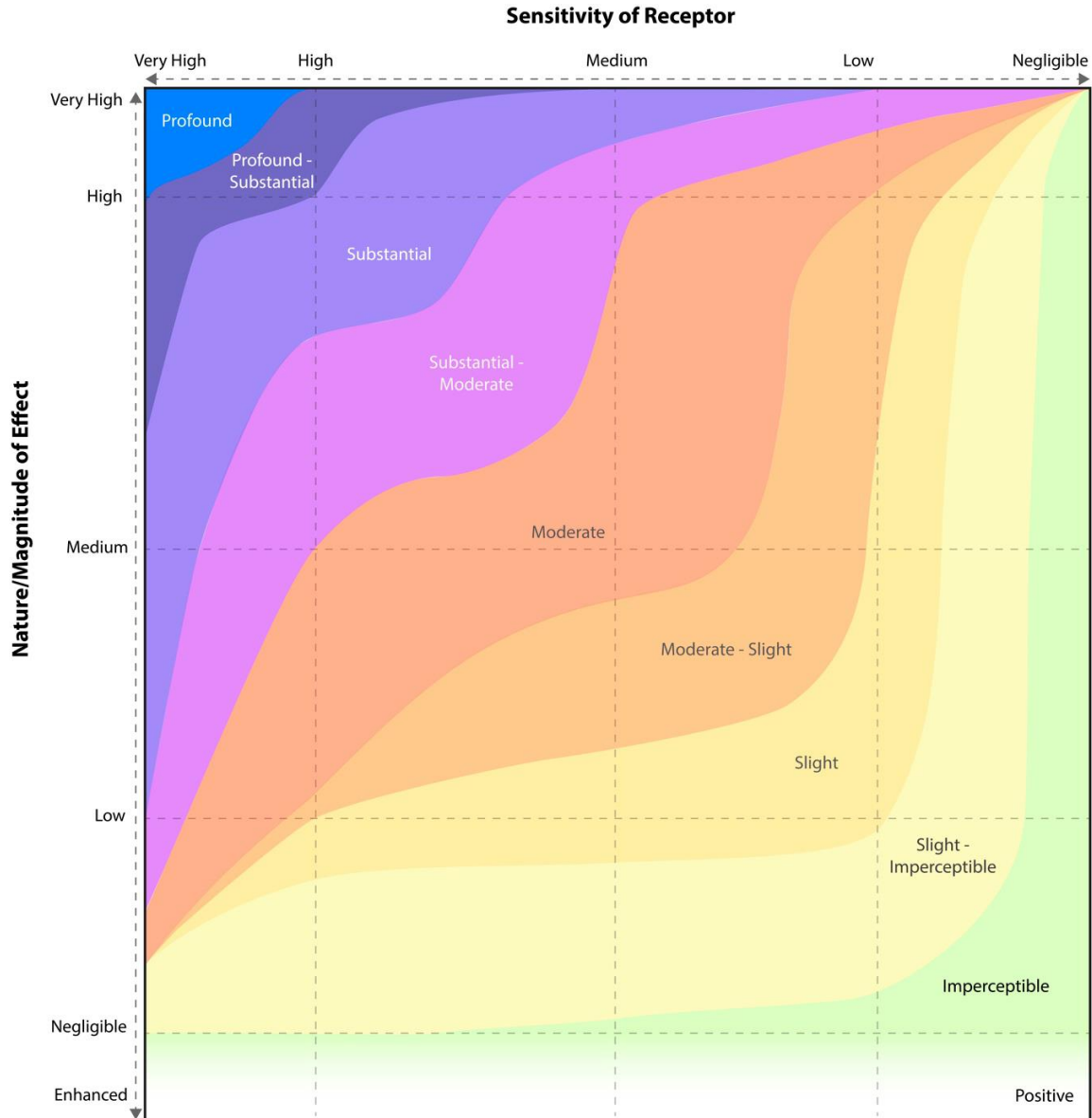


Figure 11-11. Impact Significance Matrix

Table 11-2. Assessment of Magnitude of Change for Landscape Receptors

Magnitude	Typical Criteria for Landscape Receptors
High	Major removal or addition of landscape features or removal of localised but unusual or distinctive landscape features and/or addition of new conspicuous features and elements which may alter the character of the landscape (with uncharacteristic features being negative and characteristic features being positive). Physical loss of landscape features that are not replaceable or are replaceable only in the long term.
Medium	Moderate removal or addition of landscape features and/or addition of new noticeable features and elements which would be clearly visible but would not alter the overall character of the landscape (with uncharacteristic features being negative and characteristic features being positive). Physical loss of landscape features that are replaceable in the medium term.

Low	Minor removal or addition of landscape features and/or addition of new discrete features and elements which would be perceptible within but would not alter the overall character of the landscape (with uncharacteristic features being negative and characteristic features being positive). Physical loss of landscape features that are readily replaceable in the short term.
Negligible	Barely perceptible removal or addition of landscape features would occur, and the development would be barely perceptible in visual/ character terms.



View Location Map

This map is for view location purposes only. Please refer to Architects drawings for site layout and redline boundary.

Figure 11-12. Visual Receptors - Locations

11.9 Visual Selector Interaction

The 13 no. visual receptors have been assessed and presented to the design team. Through a process of dialogue in conjunction with the project architects, planners and Digital Dimensions, they represent the most significant and sensitive location points, and were based upon the sensitivity of the locations and typical criteria is listed on Table 1, above.

11.9.1 Sensitivity - susceptibility of receptors.

A visual receptor is a human user of the landscape. The practice has adopted the principle that the sensitivity for each type of visual receptor is inherent to the nature of the activity they are undertaking rather than the view itself.

In accordance with the Institute of Environmental Management and Assessment (“IEMA”) Guidelines for Landscape and Visual Assessment (3rd edition 2013) visual receptors most susceptible to changes in views and visual amenity are:

- “Residents at home;

- *People, whether residents or visitors, who are engaged in outdoor recreation, including use of public rights of way, whose attention or interest is likely to be focussed on the landscape and on particular views;*
- *Visitors to heritage assets, or to other attractions, where views of the surroundings are an important contributor to the experience;*
- *Communities where views contribute to the landscape setting enjoyed by residents in the area;*
- *Travellers on road rail or other transport routes where such travel involves recognised scenic routes and awareness of views is likely to be heightened”.*

Visual receptors that are less susceptible to changes in views and visual amenity include:

- *“People engaged in outdoor sport or recreation, which does not involve or depend upon appreciation of views of the landscape;*
- *People at their place of work whose attention may be focussed on their work or activity, not their surroundings and where the setting is not important to the quality of working life”.*

11.9.2 Images & Photomontages

14 no. images have been prepared surrounding the site to fully illustrate the physical and visual nature of the proposed development.

A collection of 14 no. photomontages have been prepared surrounding the site to fully illustrate the physical and visual nature of the proposed development. Please note the proposed photomontage photo location points were prepared by Digital Dimensions from publicly accessible viewpoints around the location of the subject lands and internal to the development.

Table 11-3. Visual Receptor Sensitivity

Sensitivity	Typical Criteria for Visual Receptors
High	Users of residential properties, public rights of way, named viewpoints and scenic roads or railways. Users of cultural heritage features including World Heritage Sites, Registered Parks and Gardens, Scheduled Monuments, Listed Buildings and Conservation Areas where they are known to be tourist destinations or places used by local communities.
Medium	Users of public rights of way (urban or industrial areas) play areas, sporting and outdoor active recreational facilities and rural roads.
Low	Users of office and employment areas, industrial areas and the main road and rail network.


11.10 Visual Impact Assessment Viewpoints

11.10.1 Visual Impacts: Images


We have noted images from various receptor points as per the aerial plan (Figure 11.12), enclosed in the accompanying landscape receptor views. They have been prepared to illustrate the impacts, if any, with respect to the proposed development along associated access roads, the Carnew Road, Kilnahue Lane, Local Housing Estates, surrounding area and the in the centre of Gorey.

View	Description
1	Looking South-east, on Ballyrahan Road
2	Looking South, Southwest at the crossroads in Ballown
3	Looking Southwest, on Scholars Walk before the roundabout
4	Looking East on Carnew Road (R725) outside of Gorey Hill housing estate.
5	Looking West Northwest on (R732) – after roundabout from M11
6	Looking North Northwest from Ramstown Upper
7	Looking East, from R725 at Y junction. after Glandoran
8	Looking South - east on Kilnahue Lane at Creagh Upper Junction
9	Looking South - east on Kilnahue Lane at North corner of site
10	Looking West on Carnew Road at the corner of the site
11	Looking West on Carnew Road (R725) opposite dwellings backing onto site
12	Looking North-east on Carnew Road (R725) opposite dwellings West of site
13	Looking West at junction of Carnew Road and Gorey Hill


The 13 no. visual receptors that are presented, are the closest to the proposed development site and have been selected to best represent the most significant and sensitive location points.


View 1	
Existing View	Looking south-east, on Ballyrahan Road
Proposed View	<p>The proposed development site is shown with red outline and cannot be seen from the road due to the existing mature planting and because of development location on lower ground over the brow of the hill.</p> 
Impact - Construction Stage	No Impact - Neutral in the short term. Cannot be seen due to hedgerow and trees along the road
Impact - Operational Stage	No Impact - Neutral in the short term. Cannot be seen due to hedgerow and trees along the road

Visual Receptor Sensitivity	Medium
Magnitude of Change for Landscape Receptors	Medium
Quality of Change	Cannot be seen due to hedgerow and trees along the road and because of development location on lower ground over the brow of the hill.


View 2	
Existing View	Looking south, southwest at the crossroads in Ballown
Proposed View	<p>The red outline denotes the location of the proposed development. The proposed development is not seen from the road due to the existing mature planting.</p> 
Impact – Construction Stage	No Impact – Neutral in the short term. Cannot be seen due to hedgerow and trees along the road
Impact – Operational Stage	No Impact – Neutral in the short term. Cannot be seen due to hedgerow and trees along the road
Visual Receptor Sensitivity	Medium
Magnitude of Change for Landscape Receptors	Medium
Quality of Change	Cannot be seen due to hedgerow and trees along the road. Further reduced over time by maturing plant material – trees, hedges, and shrubs.

View 3	
Existing View	Looking southwest, on Scholars Walk before the roundabout
Proposed View	The red outline denotes the location of the proposed development. The proposed development cannot be seen from the road due to the existing dwellings constructed along the northern side of Scholars Walk


	
Impact – Construction Stage	No Impact – Neutral in the short term. Cannot be seen due to existing dwellings
Impact – Operational Stage	No Impact – Neutral in the short term. Cannot be seen due to existing dwellings
Visual Receptor Sensitivity	Low
Magnitude of Change for Landscape Receptors	Low
Quality of Change	Neutral in the long term. Cannot be seen due to existing dwellings.


View 4	
Existing View	Looking east on Carnew Road (R725) outside of Gorey Hill housing estate.
Proposed View	<p>The red outline denotes the location of the proposed development and the proposed development, in part can be seen from the Road. The existing dwellings along with planting frames the development, therefore a portion of the development may be seen</p> 
Impact – Construction Stage	Moderate to Negative Impact
Impact – Operational Stage	Moderate Impact – consistent with emerging trends. Positive in the long term due to extensive tree, hedgerow and woodland planting.
Visual Receptor Sensitivity	Low


Magnitude of Change for Landscape Receptors	Low
Quality of Change	Negative in short term, Neutral in the medium term, Positive in long term. Can be seen partly due to existing dwellings and vegetation.


View 5	
Existing View	Looking west northwest on (R732) – after roundabout from M11
Proposed View	<p>The red outline denotes the location of the proposed development. The red outline denotes the location of the proposed development. The proposed development is not seen from the road due to the existing mature planting.</p> 
Impact – Construction Stage	No Impact – Neutral . Cannot be seen due to existing vegetation
Impact – Operational Stage	No Impact – Neutral Cannot be seen due to existing vegetation
Visual Receptor Sensitivity	Low
Magnitude of Change for Landscape Receptors	Low - Medium
Quality of Change	Cannot be seen due to existing vegetation

View 6	
Existing View	Looking north northwest from Ramstown Upper
Proposed View	The red outline denotes the location of the proposed development. The proposed development cannot be seen from the road, because the development is behind the hill


	
Impact – Construction Stage	No Impact – Neutral in the short term. Cannot be seen due to topography
Impact – Operational Stage	No Impact – Neutral in the short term. Cannot be seen due to topography
Visual Receptor Sensitivity	Medium
Magnitude of Change for Landscape Receptors	Medium
Quality of Change	Cannot be seen due to topography


View 7	
Existing View	Looking east, from R725 at Y junction. after Glandoran
Proposed View	<p>The red outline denotes the location of the proposed development. The proposed development cannot be seen from the Road due to mature hedgerows and topography</p> 
Impact – Construction Stage	No Impact - Neutral
Impact – Operational Stage	No Impact - Neutral
Visual Receptor Sensitivity	Medium
Magnitude of Change for Landscape Receptors	Medium
Quality of Change	No Impact - Neutral


View 8	
Existing View	Looking southeast on Kilnahue Lane at Creagh Upper Junction
Proposed View	<p>The proposed view shows one entrance to the development. The proposed development can be seen from the road due to the existing hedgerow being removed</p> 
Impact – Construction Stage	No Impact - Neutral
Impact – Operational Stage	No Impact - Neutral
Medium	Medium
Magnitude of Change for Landscape Receptors	Medium
Quality of Change	Cannot be seen due to topography

View 9	
Existing View	Looking southeast on Kilnahue Lane at north corner of site
Proposed View	<p>The proposed view shows one entrance to the development. The proposed development can be seen from the road due to the existing hedgerow being removed</p> 
Impact Construction Stage	– Negative to moderate Impact


Impact – Operational Stage	Moderate Impact – consistent with emerging trends.
Visual Receptor Sensitivity	Medium
Magnitude of Change for Landscape Receptors	Medium
Quality of Change	Moderate to Neutral in the short term. The organisation of a landscape with associated paths, trees and landscape shall form a new extension and residential area to Gorey and shall be a positive long-term addition.

View 10	
Existing View	Looking west on Carnew Road at the corner of the site
Proposed View	<p>The proposed view shows the development at the north corner of the site. The proposed development can be partly seen from the road due to the existing hedgerow being removed</p> 
Impact – Construction Stage	Moderate to Negative Impact
Impact – Operational Stage	Moderate Impact – consistent with emerging trends.
Visual Receptor Sensitivity	Medium
Magnitude of Change for Landscape Receptors	Medium
Quality of Change	Moderate to Neutral in the short term. The organisation of a landscape with associated paths, trees and landscape shall form a new extension and residential area to Gorey and shall be a positive long term addition.

View 11	
Existing View	Looking west on Carnew Road (R725) opposite dwellings backing onto site
Proposed View	<p>The proposed view shows the development at the south corner of the site. The proposed development can be partly seen from the road due to the existing hedgerow being removed and height of the entrance building.</p> 
Impact – Construction Stage	Moderate to Negative Impact,
Impact – Operational Stage	Moderate Impact – consistent with emerging trends.
Visual Receptor Sensitivity	Low
Magnitude of Change for Landscape Receptors	Low - Medium
Quality of Change	Negative in the short term, Neutral, in the medium term, Positive in the long term

View 12	
Existing View	Looking north east on Carnew Road (R725) opposite dwellings west of site
Proposed View	<p>The proposed development can be seen from the road due to the existing hedgerow being removed and topography of the land.</p> 
Impact – Construction Stage	Moderate Impact

Impact – Operational Stage	Moderate Impact – consistent with emerging trends.
Visual Receptor Sensitivity	Low
Magnitude of Change for Landscape Receptors	Low - Medium
Quality of Change	Moderate to Neutral in the short term. The organisation of a landscape with associated paths, trees and landscape to the front of the development area shall shape a new residential area to Gorey and shall be a positive long term addition.

View 13	
Existing View	Looking west at junction of Carnew Road and Gorey Hill
Proposed View	<p>The red outline denotes the location of the proposed development. The proposed development can be partly seen from the road due to the existing mature Hedgerow</p> 
Impact – Construction Stage	Moderate Impact
Impact – Operational Stage	Moderate Impact – consistent with emerging trends.
Visual Receptor Sensitivity	Low
Magnitude of Change for Landscape Receptors	Low - Medium
Quality of Change	Moderate to Neutral in the short term. The organisation of a landscape with associated, trees and woodland shall form a new extension and residential area to Gorey and shall be a positive long term addition.

11.11 Avoidance Remedial and Mitigation Measures

11.11.1 Construction Phase

During the construction of the development, the area shall be changed from agricultural use lands to a residential development with a crèche. The introduction of the built structures, roads, carparking and landscaped open spaces will be carried out while maintaining most of the existing surrounding hedges and trees of the site. During construction, there will be a change to the landscape and there will be negative visual impacts for residents and visitors to the areas adjacent to the site associated with construction activity.

Tree protection shall be provided to retain the character of the existing trees and hedgerows.

Although the existing hedgerow along the Carnew Road and Kilnahue Lane shall be removed in order to provide a public path and associated upgrades to the roads, it is proposed to retain the existing mature trees and shrubs along the perimeter of the site.

The development shall be carried out in an organised basis, thus reducing the visual impact upon the environment; however, the impact on the initial area of construction shall be moderate to significant. The remedial measures proposed include the implementation of appropriate site management procedures – such as the control of site lighting, storage of materials, placement of compounds, delivery of materials, car parking, etc. Visual impact during the construction phase will be mitigated somewhat through appropriate site management measures and work practices to ensure the site is kept tidy, dust is kept to a minimum, and that public areas are kept free from building material and site rubbish.

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

The retention of the hedgerows surrounding the site shall reduce the visual impact of the proposal during construction.

As the development increases and phasing continues, the improvement in terms of landscape elements, trees, hedgerows and woodland planting, the growth shall reduce the visual impact and in the long term and shall be a positive impact.

The greatest impact shall be the views through the site as they will become determined by the existing landscape elements of trees and hedges. As the boundary are being retained and augmented by the introduction of new trees and planting, the predicted impact during construction shall be moderate in the short-term depending on the length of time on site.

11.11.3 Operational Phase

The mitigation measures, including measures taken during the design stage, which have evolved throughout the design process, that have been adopted in the proposed scheme and are detailed in the Landscape Plan, are as follows:

- The retention or replacement of some of the existing landscape structure of field boundaries, where possible, as well as boundary trees and an area of woodland to the North-west and also internally. A large, cohesive area of open space has been provided consistent with that set out in the LAP.
- The architectural layout aims to address visual impacts by proposing variety in scale, massing and elevational treatment of buildings and by creating positive frontage onto the Carnew Road and Kilnahue Lane.
- The extensive planting of additional trees and shrubs throughout the site and on the site boundaries in keeping with the wider landscape character, will over time, reduce the visual mass of the buildings, soften the development over time from various viewpoints and assist in integrating the development into the landscape.
- Native and pollinator species (as per The All Ireland Pollinator Plan 2021 – 2025) planting for biodiversity has been incorporated into the scheme and this includes a native tree belt / woodland area, wildflower meadows and semi natural grassland.
- It is proposed that the topsoil from the calcareous grassland to the North of the site is retained, stored appropriately and re-spread and allowed to recolonise naturally to form the semi-natural grassland and meadow areas denoted in the Landscape Plan. This is to retain the existing species on site.
- Several connected public open spaces have been designed as part of an overall design strategy that focuses on creating a distinctive ‘sense of place’ and individual character for the development area. The design of public open space that forms part of a network of spaces that includes areas for passive and active recreation, social / community interaction and play facilities catering for all ages. This area of open space corresponds to that as indicated in the LAP
- The hedgerows that are to be removed shall and reinstated with additional native tree planting in the open spaces, tree planting to the street scape and communal areas. An urban forest is proposed to further screen the buildings and create a strong visual screening setting the buildings into the landscape.

Application of best practice horticultural methods to ensure that mitigation measures establish and grow appropriately.

Landscape works are proposed to reduce and offset any adverse impacts generated due to the proposed development, where possible. The planting of substantial numbers of new trees and other planting in the open spaces, at the site boundaries and internal roads, both native and ornamental varieties, will enhance the overall appearance of the new development and compensate for the removal of hedgerows and trees where needed for the construction works, and increase the overall landscape capacity of the site to accommodate development.

11.12 Monitoring

A Landscape Architect shall be appointed to oversee and monitor the project at construction and operational stage. They shall liaise with other project members in relation to any existing and proposed trees.

The landscape architect shall overview all hard and soft landscape works and liaise with resident engineer, project team and contractor. The landscape architect shall also inspect the trees; however, most of the monitoring works shall be during and post-civil construction stage. The landscape architect shall review and instruct on details of soft planting, trees, shrubs and of paving materials, walls, and railings.

During the operational stage, the Landscape Architect and Arborist shall review the state of all planting and trees, The landscape architect shall review for period of 18 months, from practical completion of each stage the standard and quality of the materials and workmanship. A final certificate of completion shall be issued by the landscape architect in respect of this.

11.13 Interactions and Cumulative Impacts

Inter-relationships are the interaction/interrelations between the impacts and proposed mitigation for one discipline with another associated discipline.

11.13.1 Traffic

Traffic in the proposed development will have landscape and visual effects on properties in proximity to the proposed development. These effects were taken into account during the design process of the proposed development. Mitigation measures have been proposed, in the form of landscape planting, street trees, width of new streets and roads. The organised planting of street trees along roads and parking spaces, all provide a new environment and sense of place.

11.13.2 Soils & Geology

As a result of the redistribution of traffic, there is a risk to water quality through pollution and spillage accident risk. The construction phase of the project has the potential to impact on groundwater and habitats. Mitigation measures have been put in place to avoid and/or minimise these effects. During the operational stage, sealed drainage systems will be used and stormwater drainage will be suitably treated prior to discharge. The SUDS (Sustainable Urban Drainage System) proposed will be a significant improvement over the traditional drainage regimes and with the distribution of the traffic onto the new roads is likely to result in an improvement during the operation stage for hydrogeology. The SUDS proposed aim to utilise a two-step intervention of surface water, cleaning and temporary storage, prior to release to the system.

11.13.3 Hydrogeology

As a result of the redistribution of traffic, there is a risk to water quality through pollution and spillage accident risk. The construction phase of the project has the potential to impact on groundwater and habitats. Mitigation measures have been put in place to avoid and/or minimise these effects. During the operational stage, sealed drainage systems will be used, and stormwater drainage will be suitably

treated prior to discharge. The SUDS (Sustainable Urban Drainage System) proposed will be a significant improvement over the traditional drainage regimes and with the distribution of the traffic onto the new roads is likely to result in an improvement during the operation stage for hydrogeology. The SUDS proposed aim to utilise a two-step intervention of surface water, cleaning and temporary storage, prior to release to the system.

11.13.4 Material Assets & Land – Property

Landscape and visual effects may impact on residential properties located near the proposed development. Likely landscape and visual effects will be most pronounced during the construction and initial operation stages, causing initial visual impacts, after which landscape mitigation measures will be increasingly effective in integrating the proposed development within the landscape and in reducing landscape and visual impacts on properties.

11.13.5 Biodiversity

The scheme has been developed to minimise the removal of existing hedgerows and trees on the Kilnahue site. Open spaces have been selected to retain the trees and hedgerows. However, most parts of internal hedgerows and scrub vegetation will be removed in the construction stage due to the regrading of the land. This shall have a negative effect on landscape quality visual amenity and biodiversity.

Landscape mitigation proposals have been developed to be complementary with the ecological requirements. These include planting of native, naturalised, and indigenous species to augment existing hedgerows. The hierarchy of street tree planting shall help in reconnecting ecological networks resulting in a positive effect on biodiversity and a positive long term impact for the subject site at Kilnahue.

11.13.6 Population & Human Health

Negative temporary visual impacts will arise for residents located close to or adjoining the construction boundary. A Construction Management Plan (CMP) shall be drawn prior to construction and implemented. Specific mitigation measures include the provision of hoarding around construction compounds during the construction phase for properties particularly impacted by the works.

During the operational phase, landscape and visual impacts will arise from the built physical presence of the roads and streets. Mitigation measures will include general measures such as retention of existing hedgerows and trees, the augmentation of existing hedgerows established throughout the development, and the planting of a range of trees and species. Landscape and visual mitigation measures have been utilised in the design of the proposed development to reduce impacts on property.

The impacts of the new development shall be offset by the further potential to enhance sustainable green links through the site and to surrounding employment and housing areas. The engagement with the natural landscape environment and renewed habitat areas are beneficial to the health and wellbeing of the local population. The facilitating of sustainable development is a long term positive visual and physical impact. The creation of a sense of place in Kilnahue shall be positive for human health and community wellbeing.

11.14 Difficulties Encountered in Compiling

Kilnahue is an open site with easy access to the site. There were no difficulties encountered on visiting the development area.

11.15 Conclusion

The visual impact of the housing development shall be negative at first, due to the reduction in open space and the removal of the roadside and internal hedgerows. However, as the subject site provides more accommodation for future residents, the well-designed layout that retains and is sympathetic to the characteristics of the surrounding landscape, it shall have a moderate visual impact that is consistent with emerging trends

The increase and coherent design of external spaces shall replace the open space of the field. A direct connection to the open space to the North, from the Kilnahue Lane, utilising the existing hedge line, shall provide a positive visual amenity.

The retention of the existing native hedgerows along perimeter of the site , along with the proposed planting shall tie the proposed dwellings with the natural landscape.

Although the character of the environment shall change, it is in line with emerging patterns of development in the locality, notably Kilnahue and the Gorey area. The proposal is, however, sympathetic to the surrounding landscape and shall present a moderate visual impact in the long term due to the extensive open space an landscape development.

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

The duration of this visual impact shall be negative in the short term but as development increases in the Gorey LAP environs, the emerging trends shall view this development as moderate neutral to positive in the long term, as the proposal is well designed and sympathetic to the natural landscape.

It may be viewed, that as this new development retains elements of the existing rural character, it enshrines the retention of the surrounding hedgerows, provides valuable amenity space and creates a new and important urban landscape in the form of organised planting and creation of integrated biodiversity throughout the site.

The proposed development shall influence the surrounding land use. This development shall be an addition to the existing urban fabric of the Kilnahue area, and in the medium term, it shall have a moderate impact while in the long term it shall be positive upon the landscape and its usage, due to its strong connections and organisation of open spaces.

As the proposed houses are surrounded by existing hedgerows and housing developments, the visual impact upon the landscape, may not be seen from many of the surrounding visual receptors, notably the Carnew Road, Kilnahue Lane, the visual impact shall be neutral in the long term.

The visual impact shall be moderate to significant due to the rising landform. Therefore, from the visual receptors on Carnew Road and from Kilnahue Lane, it shall be a significant visual impact in the short term, to a moderate impact in the medium and positive in the long term.

The proposed 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 moderate to significant in the short term, moderate in the medium term resulting as neutral visual impact in the long term. This shall be due to the emerging patterns of development – maturing landscape and the retention of existing habitat and hedgerows.

11.16 References

- British Standard BS5837:2012 Trees in Relation to Design, Demolition and Construction. Recommendations.
- Advice Notes on Current Practice in the preparation of Environmental Impact Statements (1995)
- Guidelines on the Information to be Contained in Environmental Impact Statements (2002).
- Revised Guidelines on the information to be contained in Environmental Impact Statements Draft (September 2015)
- Advice Notes for Preparing Environmental Impact Statements Draft (September 2015)
- Guidelines On the Information to Be Contained in Environmental Impact Assessment Reports Draft (August 2017)
- Wexford County Development Plan 2013-2019
- Gorey Town & Environs local area plan 2017-2023
- Draft Wexford County Development Plan 2021-2027
- Landscape Institute and Institute of Environmental Management & Assessment (2013). Guidelines for Landscape and Visual Impact Assessment.
- Planning and Development, Act 2000, as amended.

12.0 TRAFFIC AND TRANSPORT

12.1 Introduction

This chapter of the EIAR assess the likely effects of the proposed development in terms of vehicular, pedestrian and cycle access during the construction and operational phases of the proposed development.

The chapter describes the methodology, the receiving environment at the application site and surroundings, the characteristics of the proposal in terms of physical infrastructure, the potential impact that proposals of this kind would be likely to produce, the mitigation measures required to prevent, reduce or offset any significant adverse effects, and the predicted impact of the proposal examining the effects of the proposed development on the local road network.

A full description of the development can be found in Chapter 2 of this EIAR. This chapter was completed by Waterman Moylan Consulting Engineers.

12.2 Assessment Methodology

The following methodology has been adopted for this assessment:

- Review of the relevant available information including, where available Development Plans and Local Area Plans, existing traffic information and other relevant studies;
- Site visit to gain an understanding of the site access and observe the existing traffic situation and receiving environment;
- Description of the overall proposed development;
- Detailed estimation of the transport demand to be generated by the development. The morning and evening peak times will be addressed as well as an estimation of the construction stage traffic and the Annual Average Daily Traffic (AADT), and
- Assessment of the impact of generated traffic on local junctions, car parking requirements and accessibility of the site by sustainable modes including walking, cycling and public transport.

12.3 Receiving Environment

This section considers the baseline conditions, providing background information for the site in order to determine significance of any traffic implications. It also considers the existing accessibility of the site by sustainable modes of transport.

12.3.1 Site Location

The proposed development site is located to the west of Gorey town. It is bounded to the northeast by the Kilnahue Lane, to the northwest and southwest by greenfield lands and to the southeast by the R725 Carnew Road, a Petrol Station and some existing residential dwellings. The location of the subject site is shown in Figure 9.1 below.

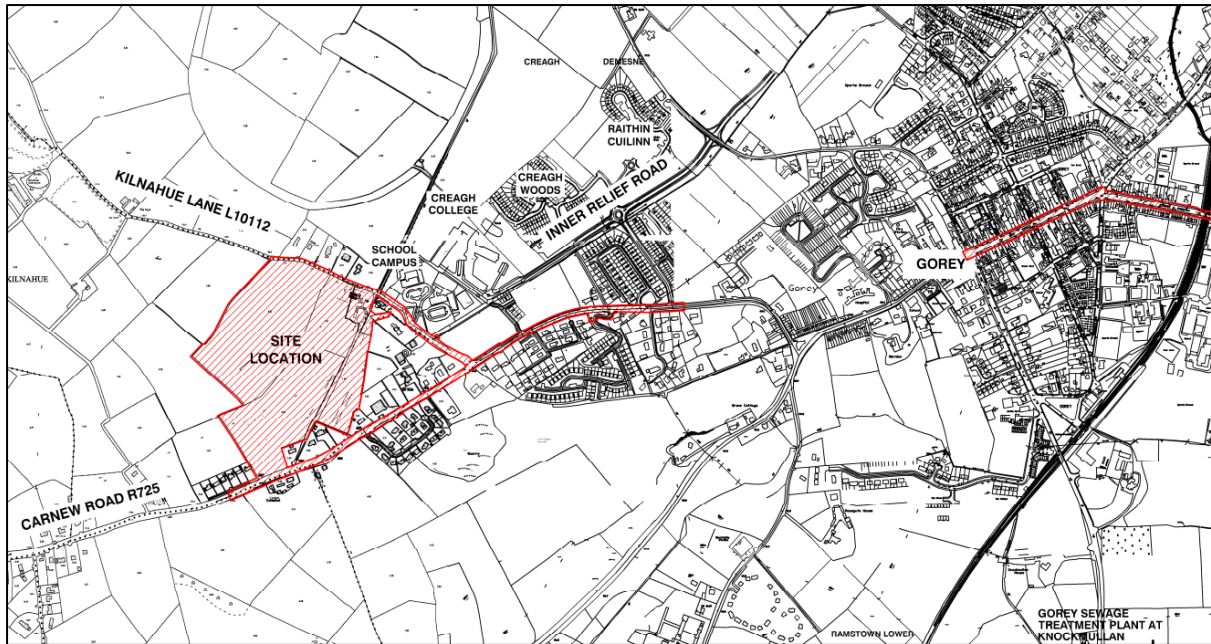


Figure 12-1. Location of the Proposed Development Site

12.3.2 Local Road Network

Roads

The subject site is bounded by two roads, the R725 Carnew Road to the south and the Kilnahue Lane to the north. Vehicular access is proposed via both roads.

Carnew Road is part of the R725 regional road. R725 is approximately 53km in length and runs in an east-west direction from Gorey through Carnew and Shillelagh to Carlow.

The speed limit along the R725 adjacent to the proposed site access is 60kph, changing to 80kph heading west and to 50kph heading east from the junction with Kilnahue Lane. To the west of this junction, the R725 is 6.0m wide with a footpath running on the northern side of the carriageway for approximately 240m up until the petrol service station.

To the east of the junction with Kilnahue Lane, the R725 is 6.0m wide with footpath, cycle path and layby parking provided along the northern side for the first 80m. The layby parking and the cycle path ends whilst the footpath continues.

Kilnahue Lane is a single carriageway road running north-south to the east and north of the subject site from its junction with R725. It is generally 6.0m wide and provides local access to a small number of houses, to two primary schools and to a motor service commercial unit.

To the east of its carriageway, for approximately 300m, Kilnahue Lane has a footpath and a two-way cycle path (5.0m wide), which currently facilitate access to the school site.

Approaching the intersection with R725, a pedestrian crossing is provided on Kilnahue Lane.

Junctions

The existing primary junctions in the area surrounding the proposed development site are:

- **Junction A (Existing Priority-controlled T-junction):** R725 Carnew Road / Kilnahue Lane.
- **Junction B (Existing Priority-controlled T-junction):** Kilnahue Lane / Access Road to School Site.

The location of these junctions in relation to the subject site is illustrated in Figure 12.2. Currently, there are no upgrades or redesigns proposed for these junctions. However, it is worth mentioning that Junction A and a section of the R725 Carnew Road were recently upgraded by Wexford County Council.

Direct vehicular accesses to the subject development are proposed via R725 Carnew Road to the south and Kilnahue Lane to the north. There are proposals for construction of one single access junction off R725 Carnew Road and two access junctions off Kilnahue Lane. All three junctions will be priority controlled. The location of each access is illustrated below in the form of black and white arrows.



Figure 12-2. Local Road Network and Primary Junctions (Source: Google Earth).

12.3.3 Baseline Traffic Data

Traffic Survey

In order to quantify the volumes of traffic movements at key points on the road network adjacent to the site, as part of the Traffic and Transport Assessment prepared by Waterman Moylan for the subject proposed development (accompanying the documentation package under a separate cover), a 24-hour traffic survey was carried out at three sites (two junctions and a section of the R725 Carnew Road).

The 24-hour traffic survey was carried out by IDASO on Thursday 7th October 2021. A copy is included in Appendix 12.1. The sites surveyed were:

Site 1 (Existing Priority-controlled T-junction): R725 Carnew Road / Kilnahue Lane (Junction A in Figure 9.2 above).

Site 2 (Existing Priority-controlled T-junction): Kilnahue Lane / Access Road to School Site (Junction B in Figure 9.2 above).

Site 3: Section of R725 Carnew Road where the site access is proposed to be located – as illustrated in Figure 12.2 above.

The location of the surveyed sites is pertinent to the proposal as all generated trips associated with the proposed development would make their way through these sites.

The results of the survey indicated that the peak hour traffic levels through the sites occurred between the hours of 08h00 to 09h00 in the AM and 14h00 to 15h00 in the PM, which coincide with the drop-off and collection time of the nearby school site at Kilnahue Lane. The peak hour volumes are illustrated in Figure 12.3. Full traffic survey is included in Appendix A of the Traffic and Transport Assessment prepared for the subject site which is accompanying the documentation package under a separate cover.

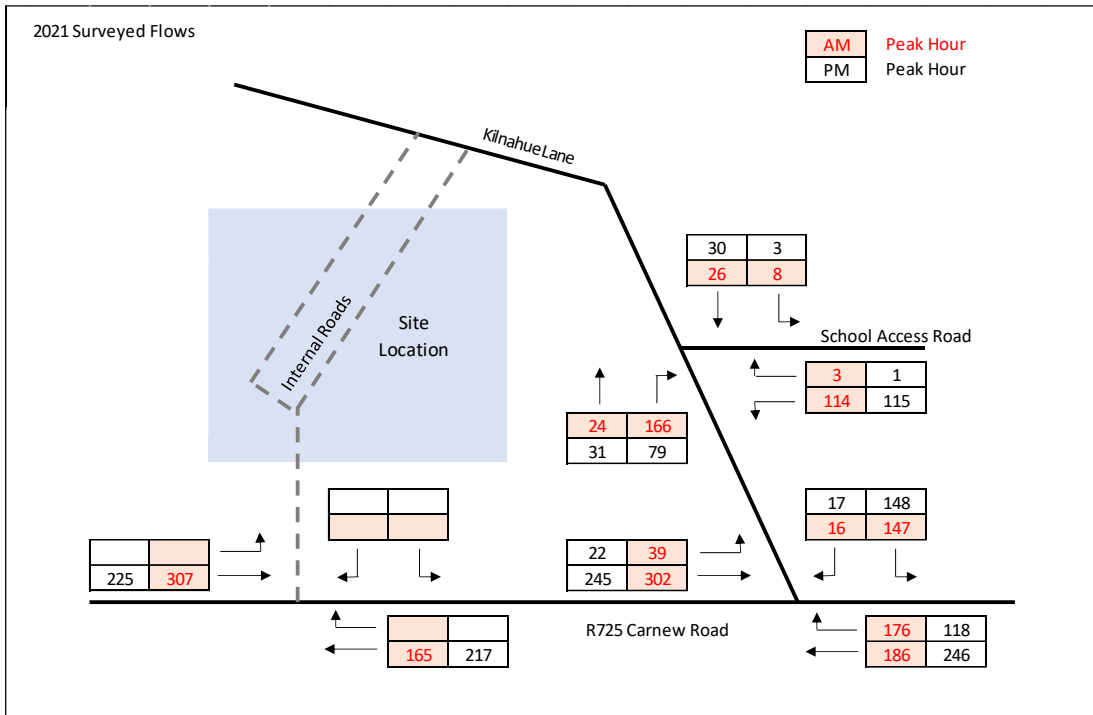


Figure 12-3. 2021 Surveyed AM and PM Peak Hour Flows.

Annual Average Daily Traffic (AADT)

As recommended in the TII Publication, ‘Project Appraisal Guidelines Unit 16.1: Expansion Factors for Short Period Traffic Counts (October 2016)’, the traffic count data has been converted to Annual Average Daily Traffic (AADT) data in order to provide a dataset representative of the annual traffic flow profile for the road network surrounding the proposed development.

The General Expansion Factor Method, as outlined in the TII Publication described above, was used to convert the surveyed flows for the 3 no. sites into the AADT. The corresponding factors for the South-East Region (Carlow, Kilkenny, Wexford, South Tipperary & Waterford) were used (set out in

Appendices B and C of the TII Publication). The AADT flows for Sites 1, 2 and 3 are shown below in Tables 12.1, 12.2 and 12.3, respectively.

Table 12-1. AADT Calculations – Site 1 (R725 Carnew Road / Kilnahue Lane)

Hour Ending	Proportion of Daily Traffic Flow	Surveyed Flows through Site 1 (vehicles)	Hour Ending	Proportion of Daily Traffic Flow	Surveyed Flows through Site 1 (vehicles)
01:00	0.005	17	13:00	0.062	413
02:00	0.004	10	14:00	0.065	570
03:00	0.002	14	15:00	0.067	796
04:00	0.002	10	16:00	0.072	607
05:00	0.003	22	17:00	0.082	547
06:00	0.009	79	18:00	0.096	608
07:00	0.027	152	19:00	0.077	464
08:00	0.060	312	20:00	0.050	359
09:00	0.086	867	21:00	0.036	237
10:00	0.067	625	22:00	0.026	151
11:00	0.058	366	23:00	0.017	47
12:00	0.059	397	24:00	0.010	30
			Total	-	7,700

24 Hour Flows = 7,700 vehicles

Weekly Average Daily Traffic (WADT) = 7,700 vehicles x 0.95 (Day - Tuesday) = 7,315 vehicles

Annual Average Daily Traffic (AADT) = 7,315 vehicles x 0.98 (Month - October) = 7,169 vehicles

Table 12-2. AADT Calculations – Site 2 (Kilnahue Lane / Access Road to School Site).

Hour Ending	Proportion of Daily Traffic Flow	Surveyed Flows through Site 2 (vehicles)	Hour Ending	Proportion of Daily Traffic Flow	Surveyed Flows through Site 2 (vehicles)
01:00	0.005	0	13:00	0.062	17
02:00	0.004	0	14:00	0.065	115
03:00	0.002	0	15:00	0.067	273
04:00	0.002	0	16:00	0.065	118
05:00	0.003	0	17:00	0.082	31
06:00	0.009	2	18:00	0.096	21
07:00	0.027	2	19:00	0.077	10
08:00	0.060	10	20:00	0.050	12
09:00	0.086	351	21:00	0.036	9
10:00	0.067	173	22:00	0.026	3
11:00	0.058	17	23:00	0.017	0
12:00	0.059	27	24:00	0.010	0
			Total	-	1,191

24 Hour Flows = 1,191 vehicles

Weekly Average Daily Traffic (WADT) = 1,191 vehicles x 0.95 (Day – Tuesday) = 1,131 vehicles

Annual Average Daily Traffic (AADT) = 1,131 vehicles x 0.98 (Month – October) = 1,108 vehicles

Table 12-3. AADT Calculations – Site 3 R725 Carnew Road at Proposed Site Access

Hour Ending	Proportion of Daily Traffic Flow	Surveyed Flows through Site 3 (vehicles)	Hour Ending	Proportion of Daily Traffic Flow	Surveyed Flows through Site 3 (vehicles)
01:00	0.005	16	13:00	0.062	302
02:00	0.004	12	14:00	0.065	342
03:00	0.002	12	15:00	0.067	443
04:00	0.002	8	16:00	0.072	413
05:00	0.003	22	17:00	0.082	484
06:00	0.009	69	18:00	0.096	521
07:00	0.027	130	19:00	0.077	418
08:00	0.060	268	20:00	0.050	306
09:00	0.086	472	21:00	0.036	193
10:00	0.067	383	22:00	0.025	145
11:00	0.058	305	23:00	0.017	48
12:00	0.059	304	24:00	0.010	29
Total				-	5,645

24 Hour Flows = 5,645 vehicles

Weekly Average Daily Traffic (WADT) = 5,645 vehicles x 0.95 (Day – Tuesday) = 5,363 vehicles

Annual Average Daily Traffic (AADT) = 5,363 vehicles x 0.98 (Month – October) = 5,256 vehicles

12.3.4 Cycling and Pedestrian Facilities

Cycling

In the vicinity of the subject development site, cyclists can benefit from the provision of approximately 300 metres of off-road cycle tracks along the northern side of Kilnahue Lane (from the School Site to R725 Carnew Road) and from 80 metres of cycle tracks on R725 Carnew Road from its junction with Kilnahue Lane heading east. There is also a two-way cycle track running along the southern boundary of the School Site which leads to Pearson’s Brook / Hollyfort Road roundabout.

Pedestrian

The existing pedestrian network surrounding the proposed development site comprises of footpaths along the northern/eastern side of the Kilnahue Lane from the school site up until its junction with R725 Carnew Road, which continues along the northern side of the R725 Carnew Road eastwards. To the west of the junction, R725 Carnew Road comprises footpaths along the northern side of the oad up until the petrol station. A pedestrian crossing with dropped kerbs and tactile paving is provided on Kilnahue Lane on the approach to the junction with R725 Carnew Road. There is also a footpath running along the southern boundary of the School Site which leads to Pearson’s Brook / Hollyfort Road roundabout.

12.3.5 Public Transport Accessibility

Bus Service

Gorey town is served by a number of public bus routes. The closest bus stops in relation to the subject site are located in Gorey town centre, approximately 1.85 to 2.25 km (21 to 26-minute walk) to the east – See Figure 12.4. The routes serving these bus stops are outlined below.

- **Route 2 (Expressway):** Dublin Airport – Wexford Station. To Wexford, this route operates at a frequency of 1 to 2 hours during the whole day, with the first bus departing from Gorey at 1h50 AM and the last at 23h46 PM. On the opposite direction – to Dublin Airport, this route also operates at a 1-to-2-hour frequency during the whole day, with the first bus departing from Gorey at 2h45 in the AM and the last at 21h20 in the PM.
- **Route 133X (Bus Eireann):** Gorey (Main Street) – Busaras. This route operates one service from Gorey to Busaras in Dublin City. The bus leaves Gorey at 6h50 in the AM and arrives in Busaras at 8h15. No service is provided on the opposite direction.
- **Route 379 (Bus Eireann):** Rosslare Harbour – Ballycanew – Wexford Station. This route operates only one service on Mondays and one service on Saturdays. On Mondays, the bus arrives in Gorey at 14h45 and leaves the town 15h30. On Saturdays, the bus arrives in Gorey at 09h40 and leaves the town at 12h05 towards Wexford.
- **Route 740 (Wexford Bus):** Redmond Square – Dublin Airport. From Monday to Friday (excluding bank holidays), this route operates with a frequency of 30 minutes to two hours during the whole day. First bus leaves Gorey at 2h25 in the morning and the last at 20h20. On the opposite direction, this route operates at 20 minutes to 1.5 hour frequency during the whole day, with the first bus leaving Gorey at 7h10 and the last at 00h35.
- **Route 740A (Wexford Bus):** Gorey – Dublin Airport. On weekdays, this route operates 9 services during the whole day. The frequency of bus is generally hourly with the first bus leaving Gorey at 6h00 in the morning and the last at 17h40 in the evening. On weekends, the service reduces to 6, with the first at 7h10 and the last at 17h40.
- **NUM11 (Wexford Bus):** Gorey (Main Street) – Whitmore Jewe – Maynooth University. This route only operates on weekdays, with the only bus leaving Gorey at 07h00 AM towards Maynooth, and the only service arriving in Gorey at 19h00 from Monday do Thursday and at 18h55 on Fridays.
- **Route X2 (Expressway):** Wexford Station – Dublin Airport. Only one service per direction is operated by this route. The bus leaves Gorey town on a daily basis at 6h40 towards Dublin Airport and at 18h00 towards Wexford.
- **Route 879 (Gorey Bus Links):** Gorey – Courtown – Ballygarrett – Ballycanew. This is a local route linking Gorey to the surrounding cities. From Monday to Friday, it operates three services, leaving Gorey at 9h15 in the AM and at 13h10 and 17h10 in the PM.
- **Route ITC07 (Dunnes Coaches):** Gorey Main Street – Carlow College. This route operates one single service. It leaves Gorey at 07h20 in the morning and arrives back at 18h23 in the PM.
- **Route 389 (Local Link Wexford):** Gorey Main Street – Knockmullen – Pollshone From Monday to Friday, this route operates four services, leaving Gorey towards Ardamine at 8h09, 18h40,

19h40 and 20h40. On Saturdays, the bus leaving at 8h09 is substituted by a service at 12h19. On Sundays, two services are provided, one leaving Gorey at 11h19 and the other at 18h49.

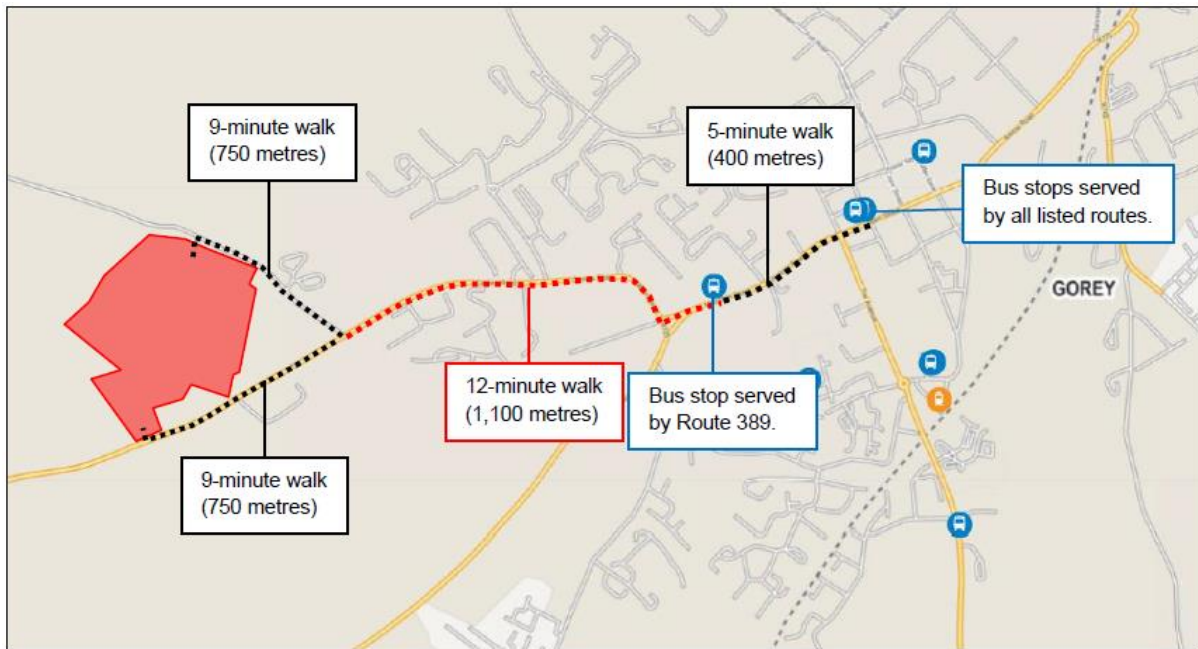


Figure 12-4. Walking Distance from the Site to the Nearest Bus Stops.

The shortest walking route to the nearest bus stops which are served by all bus routes listed above, is via R725 Carnew Road / Main Street. The listed bus routes provide many opportunities for those wishing to travel to Dublin City, Dublin Airport, Wexford and a number of closer cities and towns such as Carlow. Bus journey time to Dublin city centre is approximately 2 hours, to Dublin Airport is approximately 2.5 hours and to Wexford city is approximately 1 hour.

Rail Service

Gorey town is served by Irish Rail. The Gorey train station is located on R741 southeast of Gorey Shopping Centre. It provides access to Dublin City and Wexford, in addition to a number of stations along the route. From Gorey to Dublin, five services are provided on weekdays (leaving Gorey Station at: 5h50, 6h43, 8h25, 14h00 and 18h36), four services on Saturdays (leaving Gorey Station at: 6h45, 8h27, 14h02 and 19h01) and three services on Sundays (leaving Gorey Station at: 10h46, 15h31 and 19h12). On the opposite direction, from Gorey to Wexford, the weekday services leave Gorey Station at 11h27, 15h28, 18h31, 19h35 and 20h28, the Saturday services leave Gorey Station at 9h53, 15h25 and 20h26, and the Sunday services leave Gorey Station at 12h09, 15h29 and 20h32. The train journey time from Gorey to Dublin is approximately 1 hour and 45 minutes and to Wexford is 45 minutes.

The distance between the proposed development and the train station in Gorey is approximately 2.4 km (c. 28-minute walk and 7-minute cycle). Gorey train station provides cycle parking and car parking facilities which facilitate combined travels for those wishing to travel to Dublin (i.e., cycle-train and car-train).

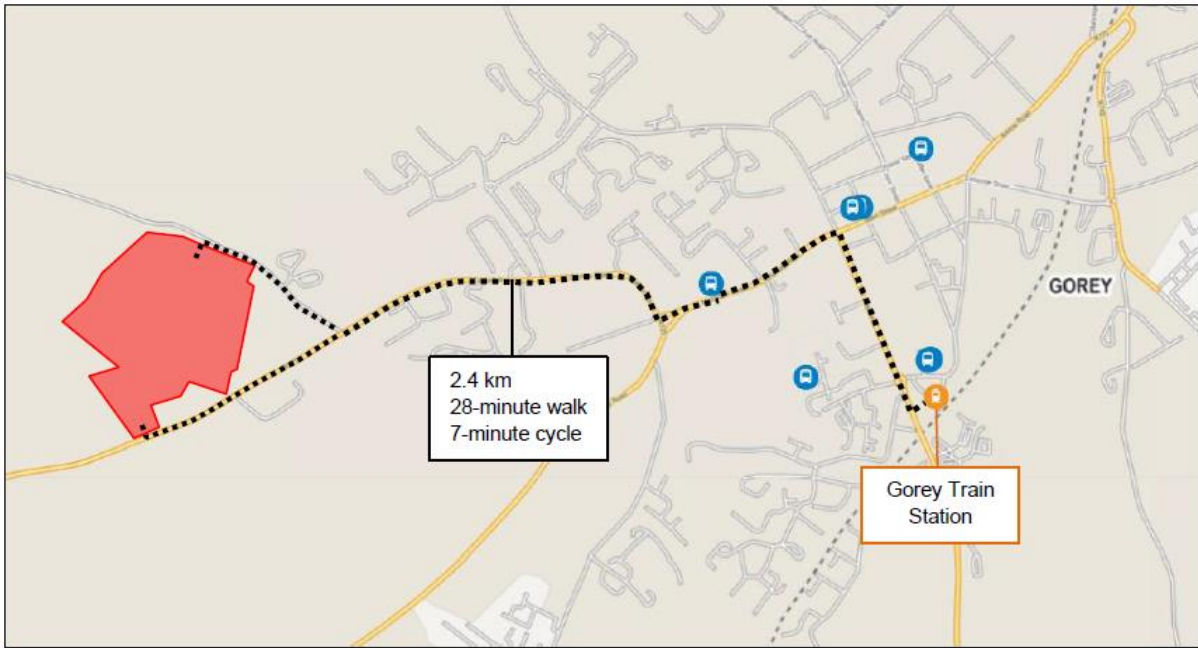


Figure 12-5. Walking Distance from the Site to Gorey Train Station.

12.4 Characteristics of Proposed Development

12.4.1 General

A full description of the development can be found in Chapter 2 of this EIAR. The following is a broad outline of the development:

The proposed development consists of a total of 421 no. residential units – comprising of 133 no. houses, 60 no. duplexes (30 no. duplex apartments and 30 no. duplex houses) and 228 no. apartments, a Creche with 565 sqm of area (89 childcare places and 11 staff) and Community Rooms/Retail with a total of 361 sqm of area. The detailed breakdown of the proposed residential scheme is provided below.

Table 12-4. Proposed Breakdown of Residential Units.

Type	1-bed	2-bed	3-bed	4-bed	Total
Apartment	84	137	7	-	228
Duplex Apartment	4	26	-	-	30
Duplex Housing	-	-	30	-	30
Housing	-	-	115	18	133
Total	88	163	152	18	421

12.4.2 Physical Infrastructure

Site Access Points

Vehicular access to the subject development is proposed via one new priority-controlled T-junction on R725 Carnew Road to the south of the site, and via two new priority-controlled T-junctions on Kilnahue Lane to the north of the site. See Figure 12.6. In addition to these vehicular access points – which will be accessible by all modes of transport, one pedestrian/cyclist link is also proposed to the

north of the site to Kilnahue Lane. The location of this pedestrian/cyclist link is also shown in Figure 12.6.



Figure 12-6. Location of Site Access Points.

Internal Road Layout

The internal road layout is generally orthogonal. Section 3.3.1 of the Design Manual for Urban Roads and Streets (DMURS) notes that street networks that are generally orthogonal in nature are the most effective in terms of permeability (and legibility).

The internal road hierarchy includes Local Access roads and home-zone / shared surfaces. The local access streets generally comprise of 8.0m wide carriageways (i.e. 2.5 wide vehicle lanes) with 1.5m wide on-road cycle lanes and minimum 1.8m wide footpaths on either side of the carriageway. Footpaths are often separated from the carriageway by verges and by on-street parking bays. The proposed shared surface zone is designed primarily to meet the needs of pedestrians, cyclists, children and residents, where the speeds and dominance of cars is reduced. It comprises of an 8.0m wide shared-surface carriageway, which will inform a clear hierarchy within the public realm, reducing the speed and dominance of cars.

Internal Pedestrian and Cyclist Facilities

Footpaths within the proposed development will be provided in accordance with Section 4.3.1 of the DMURS which suggests that a minimum 1.8m footpaths should be provided on all footways. Crossing points are located at various points within the development such that unimpeded pedestrian movement is facilitated. Raised tables are provided at crossings points, which allow pedestrians to continue at grade and also promote lower vehicle speeds. A separate statement in respect to DMURS has been prepared as part of the Engineering Assessment Report for the development which accompanies this application under a separate cover. Cycle lanes have been designed in accordance with the National Cycle Manual.

The proposed development will provide a total of 480 no. bicycle parking space of which 440 no. spaces to serve the apartment and duplex apartment units, 20 no. spaces for the Creche and 20 no. spaces to serve the retail & community hub. Cycle parking for the apartments and duplex apartments are proposed on dedicated bike storage in close proximity to the served units. For the houses and duplexes houses, cycle parking will be provided privately within the curtilage of each unit.

Car Parking Provision

The car parking spaces proposed to serve the subject development is presented below.

Table 12-5. Car Parking Spaces Proposed.

Land Use	Development Size	Car Parking Rate	Car Parking Proposed
Apartments	228 units	1.5	342
Duplex (Apartments/Houses)	60 units	1.75	105
Houses	133 units	2.0	266
Creche	11 staff 89 Childcare Spaces	-	9 12 (*)
Retail/Community	361 sqm	1 space per 26 sqm	7 (*)
Community Staff Parking			7
Visitor (at main park)			18
Total	-	-	759 spaces

(*) The retail and community will use the creche drop off spaces at the same time. These spaces are considered dual use.

From above, it can be seen that a total of 759 car parking spaces are proposed as part of the overall scheme to serve the proposed development. Of this 37 will be reserved for visitors, 16 of which are disabled/accessible spaces. This is in line with the requirements set out above and therefore considered appropriate for the subject development.

Section 18.29.7 of the Wexford County Development Plan 2013-2019 states the following with regards to Parking for People with Disabilities:

“Buildings not normally visited by the public: Minimum one space (for people with disabilities) of appropriate dimensions in every 25 standard spaces, up to the first 100 spaces; thereafter, one space per every 100 standard spaces or part thereof.”

Accordingly, 38 car parking spaces for people with disabilities will be constructed to meet this specific requirement.

Section 18.29.6 of the Wexford County Development Plan 2013 – 2019 states the following with regards to Electric Vehicles Charging Points:

*“There are three charging point options available: home charge points, public charge points in places such as on-street and shopping centre car parks and fast charge points (along inter-urban transport routes). The Council will facilitate and encourage the provision of charging points for Electric Vehicles in appropriate locations. **The Council will require the provision of at least 1 electric vehicle charging point in a new car park for new development where 40 or more car parking spaces are provided.**”*

Accordingly, a number of spaces will be provided to meet this specific requirement.

12.5 Potential Impacts

12.5.1 Introduction

The potential impacts of the proposed development from a traffic and transport perspective at both construction and operational stages are outlined in the following sections.

12.5.2 Traffic Impact

Construction Traffic

There is potential for construction to impact from a noise and dust perspective in relation to the surrounding road network. Deliveries to and from the site by heavy good vehicles will impact on noise levels, whilst dust may result from vehicles travelling along gravel roads within the site and from general earthworks activities. There is also potential for traffic congestion, due to increased heavy good vehicles on the road network which may perform turning movements, unloading, etc. in areas that impact on traffic. The potential for inappropriate parking, particularly along the surrounding access roads whilst waiting for access to the site, may also impact local road users. There is also potential for traffic congestion during the construction of the site accesses.

There is potential for construction traffic to have a moderate effect on the surrounding environment. However, the duration of this impact will be short-term (i.e. one to three years)

Operational Traffic

Potential Trip Generation

The traffic generation potential of the proposed development has been derived using trip rates from the TRICS database. Full TRICS report is provided in Appendix B of the Traffic and Transport Assessment accompanying the documentation package and summarised in Table 12.6 below.

Table 12-6. Car Trip Rates – Source: TRICS Database.

Land Use	Calculation Factor	AM Trip Rates (8 to 9)		PM Trip Rates (14 to 16)	
		Arr.	Dep.	Arr.	Dep.
Residential	per unit	0.128	0.318	0.111	0.128
Creche	per 100 sqm	5.946	3.271	2.279	1.288
Retail	per 100 sqm	9.946	9.946	10.270	10.378

The potential peak hour traffic generation for the proposed development is presented in Table 9.7 below. It has been calculated based on the proposed 421 no. residential units, 565 sqm childcare facility and the community hub & retail units with 361 sqm of area.

Whilst it is envisaged that the creche and the community hub/retail will solely serve the residents of the subject development, in reality this may not always be the case. As such, in order to provide a robust assessment, it has been assumed that 70% of the traffic to/from the Creche and 50% of the traffic to/from the Community Hub / Retail will originate from the local road network external to the subject site. The traffic generation below has been discounted to reflect this.

Table 12-7. Car Trip Generation - Proposed Development.

Land Use	Development Size	AM Peak Hour Trips (8 to 9)		PM Peak Hour Trips (14 to 15)	
		Arr.	Dep.	Arr.	Dep.
Residential	421 units	54	134	47	54
Creche	565 sqm	24	13	9	5
Community Hub/Retail	361 sqm	18	18	19	19
Total		96	165	75	78

From the calculations above, it can be seen that the subject proposed development is estimated to generate a total of 261 two way car trips in the AM peak hour period (96 arrivals and 165 departures) and a total of 153 two way trips in the PM peak hour period (75 arrivals and 78 departures).

Car Trip Distribution

The estimated traffic to/from the proposed development has been distributed between the following access points:

- **Access Point 1:** Proposed priority-controlled T-junction on R725 Carnew Road.
- **Access Points 2 and 3:** Proposed priority-controlled T-junctions on Kilnahue Lane.

Given the location of the proposed Access Point 1 - providing a more direct access to R725 Carnew Road, for the purpose of this assessment, it was assumed that this access will serve the majority of the proposed development trips (70%) whilst Access Points 2 and 3 are assumed to serve the remaining 30%.

Generally, based on the location of the proposed development in relation to Gorey town centre and associated employment and commercial facilities and the shortest routes to/from M1/N1 motorway, the estimated car trips were assumed to have the following trip distribution characteristics:

- 70% to/from the proposed T-junction on R725 Carnew Road, of which
 - 55% to/from east along R725 Carnew Road;
 - 15% to/from west along R725 Carnew Road;
- 30% to/from the proposed T-junctions on Kilnahue Lane, of which - 30% to/from south along Kilnahue Lane and to/from east along R725 Carnew Road.

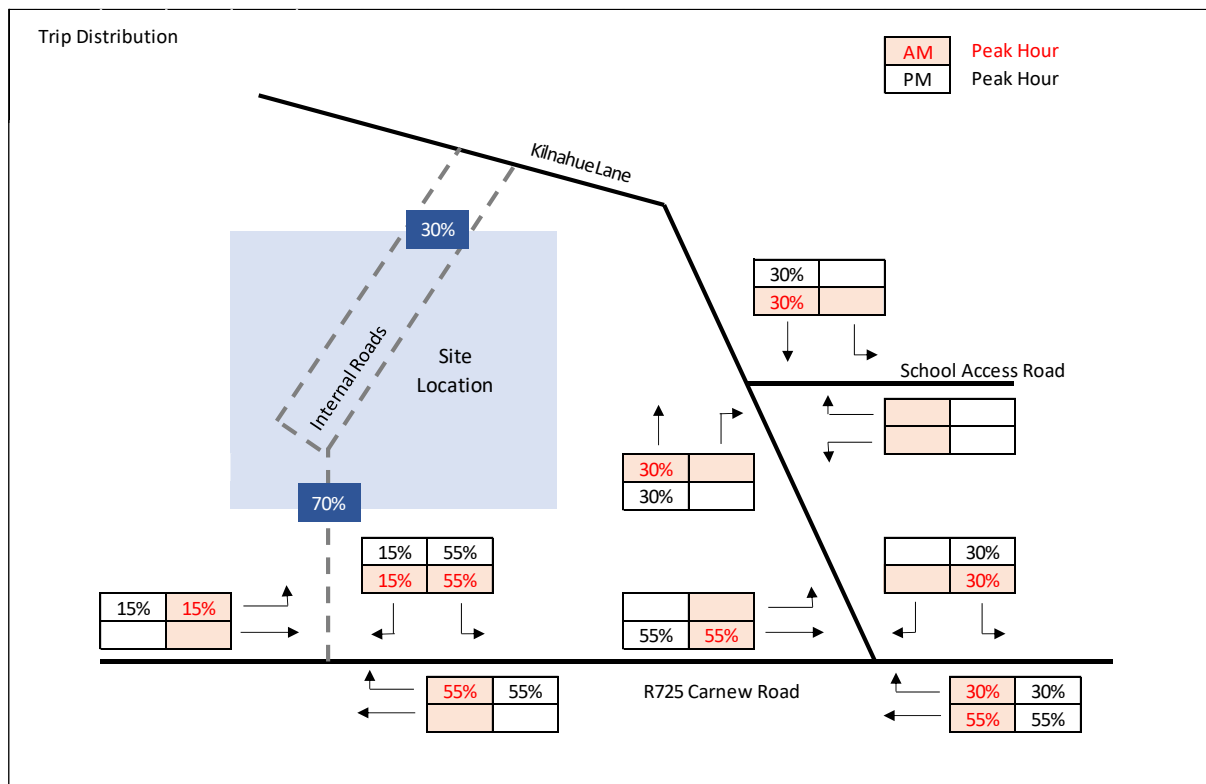


Figure 12-7. Trip Distribution.

Potential Traffic Impact on Each Assessed Junction

The extent of traffic impact from the proposed development has been determined by initially checking where generated traffic would exceed 10% of the traffic flow on the adjoining road or 5% on the road where congestion exists, or the location is sensitive. This is in line with the TII Traffic and Transport Assessment Guidelines (May 2014). A summary of the surveyed two-way traffic and the expected traffic increase at each studied junction is presented below.

Table 12-8. Existing and Expected Two-way Traffic Flows.

Junction	Junction Existing Flow - AM Peak Hour	Junction Existing Flow - PM Peak Hour	Additional Traffic Two-way Flow (AM)	Additional Traffic Two-way Flow (PM)	% Expected Increase (AM)	% Expected Increase (PM)
Site 1	866	796	222	130	25.64%	16.33%
Site 2	341	259	78	46	22.87%	17.76%
Site 3	472	442	183	107	38.77%	24.21%

As can be seen from above, all three assessed junctions (existing and proposed) are expected to receive a two-way traffic increase higher than 10%. Therefore, they have been modelled and the results are shown in the next sections.

Junction Analysis Results

In order to understand the potential traffic impact on the assessed junctions a Traffic and Transport Assessment has been prepared for the subject development and is included in this application under a separate cover. This assessment included detailed traffic modelling to assess impact and determine if any upgrade works were required on the surrounding road to facilitate the proposed development.

The traffic modelling carried out as part of the TTA includes the analysis of the three below junctions:

- **Site 1 (Existing Priority-controlled T-junction):** R725 Carnew Road / Kilnahue Lane
- **Site 2 (Existing Priority-controlled T-junction):** Kilnahue Lane / Access Road to School Site
- **Site 3 (Proposed Priority-controlled T-junction):** R725 Carnew Road / Proposed Site Access Road

A summary of the PICADY analysis results is provided below.

Site 1

- Arm A: R725 Carnew Road (SW).
- Arm B: Kilnahue Lane (W).
- Arm C: R725 Carnew Road (NE).

As per the modelling results summarised in Table 9.9, the subject Site 1 is currently operating well within capacity during both AM and PM peak hours with the highest RFC at 0.35 and a corresponding queue of 0.7 vehicle recorded on R725 Carnew Road (NE) in the AM and with the highest RFC at 0.32 and a corresponding queue of 0.5 vehicle also recorded on Kilnahue Lane (W) in the PM.

For the opening year of 2024 – DO SOMETHING, with the baseline flows factored up and the addition of the trips generated by the proposed development, Site 1 would operate well within capacity during both peak hours, with the highest RFC at 0.45 and a corresponding queue of 1.1 vehicle recorded on R725 Carnew Road (NE) in the AM and with the highest RFC at 0.38 and a corresponding queue of 0.6 vehicle recorded on Kilnahue Lane (W) for the PM. The increase on RFC values from the 2024 – DO NOTHING are: 12% on Kilnahue Lane (W) and 9% on R725 Carnew Road (NE) in the AM and 5% on Kilnahue Lane (W) and 6% on R725 Carnew Road (NE) in the PM.

In the future year of 2039 – DO SOMETHING, the analysis results indicate that Site 1 would continue to operate well within capacity during both peak hours, with the highest RFC at 0.48 and a corresponding queue of 1.2 vehicle recorded on R725 Carnew Road (NE) in the AM and with the highest RFC at 0.40 and a corresponding queue of 0.7 vehicle recorded on Kilnahue Lane (W) in the PM. The increase on RFC values from 2039 – DO NOTHING are: 12% on Kilnahue Lane (W) and 9% on R725 Carnew Road (NE) in the AM and 5% on Kilnahue Lane (W) and 6% on R725 Carnew Road (NE) in the PM. Full PICADY output report for Site 1 is provided in Appendix D of the TTA accompanying the documentation package.

Table 12-9. Site 1 - PICADY Analysis Results.

Stream	AM (08h00 to 09h00)		PM (14h00 to 15h00)	
	Queue (veh.)	RFC	Queue (veh.)	RFC
2021 (BASE YEAR)				
Stream B-AC	0.5	0.33	0.5	0.32
Stream C-AB	0.7	0.35	0.4	0.24
DO NOTHING - 2024				
Stream B-AC	0.5	0.33	0.5	0.33
Stream C-AB	0.7	0.36	0.4	0.24
DO SOMETHING – 2024				
Stream B-AC	0.8	0.45	0.6	0.38
Stream C-AB	1.1	0.45	0.6	0.30
DO NOTHING – 2029				
Stream B-AC	0.5	0.35	0.5	0.34
Stream C-AB	0.8	0.37	0.5	0.25
DO SOMETHING – 2029				
Stream B-AC	0.9	0.47	0.6	0.39
Stream C-AB	1.2	0.47	0.6	0.31
DO NOTHING – 2039				
Stream B-AC	0.6	0.36	0.5	0.35
Stream C-AB	0.8	0.39	0.5	0.26
DO SOMETHING – 2039				
Stream B-AC	0.9	0.48	0.7	0.40
Stream C-AB	1.2	0.48	0.7	0.32

Site 2

- Arm A: Kilnahue Lane (N).
- Arm B: School Access Road (E).
- Arm C: Kilnahue Lane (S).

As per the modelling results as summarised in Table 9.10 below, the subject Site 2 is currently operating well within capacity during both AM and PM peak hours with the highest RFC at 0.29 and a corresponding queue of 0.4 vehicle recorded on Kilnahue Lane (S) in the AM and with the highest RFC at 0.18 and a corresponding queue of 0.2 vehicle recorded on the School Access Road (E) in the PM.

For the opening year of 2024 – DO SOMETHING, with the baseline flows factored up and the addition of the trips generated by the proposed development, Site 2 would continue to operate well within capacity during both peak hours, with the highest RFC at 0.31 and a corresponding queue of 0.5 vehicle recorded on Kilnahue Lane (S) in the AM and with the highest RFC at 0.19 and a corresponding queue of 0.2 vehicle recorded on the School Access Road (E) for the PM. The increase on RFC values from the 2024 – DO NOTHING are: 1% on Kilnahue Lane (S) in both AM and PM peak hours.

In the future year of 2039 – DO SOMETHING, the analysis results indicate that Site 2 would continue to operate well within capacity during both peak hours, with the highest RFC at 0.33 and a corresponding queue of 0.5 vehicle recorded on Kilnahue Lane (S) in the AM and with the highest RFC at 0.20 and a corresponding queue of 0.2 vehicle recorded on the School Access Road (E) in the PM. The increase on RFC values from 2039 – DO NOTHING are: 1% on the School Access Road (E) and 1% on Kilnahue Lane (S) in the AM. Full PICADY output report for Site 2 is provided in Appendix D of the TTA accompanying the documentation package.

Table 12-10. Site 2 - PICADY Analysis Results.

Stream	AM (08h00 to 09h00)		PM (14h00 to 15h00)	
	Queue (veh.)	RFC	Queue (veh.)	RFC
2021 (BASE YEAR)				
Stream B-AC	0.2	0.19	0.2	0.18
Stream C-AB	0.4	0.29	0.2	0.14
DO NOTHING – 2024				
Stream B-AC	0.2	0.19	0.2	0.19
Stream C-AB	0.4	0.30	0.2	0.14
DO SOMETHING – 2024				
Stream B-AC	0.2	0.19	0.2	0.19
Stream C-AB	0.5	0.31	0.2	0.15
DO NOTHING – 2029				
Stream B-AC	0.2	0.20	0.2	0.19
Stream C-AB	0.5	0.31	0.2	0.15
DO SOMETHING – 2029				
Stream B-AC	0.2	0.20	0.2	0.19
Stream C-AB	0.5	0.32	0.2	0.15
DO NOTHING – 2039				
Stream B-AC	0.3	0.20	0.2	0.20
Stream C-AB	0.5	0.32	0.2	0.15
DO SOMETHING – 2039				
Stream B-AC	0.3	0.21	0.2	0.20
Stream C-AB	0.5	0.33	0.2	0.15

Site 3

- Arm A: R725 Carnew Road (W).
- Arm B: Site Access Road (N).
- Arm C: R725 Carnew Road (E).

As Site 3 is an access junction proposed to be constructed as part of the subject development works, it has been modelled only for the DO SOMETHING scenarios.

From the modelling results as summarised in Table 12.11, the proposed Site 3 would operate well within capacity for the opening year of DO SOMETHING – 2024 during both peak hours and would continue to do so for the 2039 – DO SOMETHING, with the highest RFC at 0.21 and a corresponding queue of 0.3 vehicle recorded on the Site Access Road (N) in the AM and with the highest RFC at 0.10 and a corresponding queue of 0.1 vehicle also recorded on the Site Access Road (N) for the PM. Full PICADY output report for Site 3 is provided in Appendix D of the TTA accompanying the documentation package.

Table 12-11. Site 3 - PICADY Analysis Results.

Stream	AM (08h00 to 09h00)		PM (14h00 to 15h00)	
	Queue (veh.)	RFC	Queue (veh.)	RFC
DO SOMETHING - 2024				
Stream B-AC	0.3	0.21	0.1	0.10
Stream C-B	0.1	0.08	0.1	0.06
DO SOMETHING - 2029				
Stream B-AC	0.3	0.21	0.1	0.10
Stream C-B	0.1	0.08	0.1	0.06
DO SOMETHING - 2039				
Stream B-AC	0.3	0.21	0.1	0.10
Stream C-B	0.1	0.08	0.1	0.06

12.5.3 Walking and Cycling Infrastructure

Construction Phase

There is potential of conflict between construction traffic and pedestrian/cyclists using the existing facilities on Kilnahue Lane and R725 Carnew Road. There is also potential for conflicts and disruption to vehicular access, pedestrian and cyclists during the construction works of the site access junctions.

Operational Phase

Conflicts are likely to arise where different modes of transport share the same space. On Kilnahue Lane, along the route to the nearby school site, where a dedicated cycle lane is not provided or proposed (c. 40 metres), cyclists would have to share the road with cars or the footpath with pedestrians which increases the possibility of conflicts. The traffic demand arising from the proposed development raises the potential of conflict.

12.5.4 Do-Nothing Scenario

Should the proposed development not take place, the access roads and walking/cycling infrastructure will remain in their current state and there will be no change. Background traffic would be expected to grow over time. Given the location and zoning of the subject site, it is reasonable to assume that a similar development, with a potentially more intensive requirement for vehicular trips would be established on this site at some stage in the future.

12.6 Mitigation Measures

12.6.1 Introduction

This section of the report discusses mitigation measures to reduce the impact of the proposed development on the surrounding area during the construction and operational phases.

12.6.2 Construction Phase

A Preliminary Construction, Demolition and Waste Management Plan (CDWMP) has been prepared by Waterman Moylan for the subject development in order to provide guidance on how to minimise the potential impact of the construction stage of the proposed development on the safety and amenity of other users of the public road. The CDWMP, which accompanies the documentation package under a separate cover, considers the following aspects:

- Dust and dirt control measures;
- Noise assessment and control measures;
- Routes to be used by vehicles;
- Working hours of the site;
- Details of construction traffic forecasts;
- Times when vehicle movements and deliveries will be made to the site;
- Facilities for loading and unloading; and
- Facilities for parking cars and other vehicles.

Further to the above, a detailed Construction Management Plan (CMP) will be prepared by the main contractor prior to the construction stage. This document, which will be prepared in coordination and agreement with the Local Authority, will outline site logistics and indicate the following:

- Site access location;
- Site boundary lines;
- Tower crane locations;
- Vehicle entry and exit routes to/from the site;
- Location of loading and unloading areas;
- Location of site offices and welfare facilities;
- Location of material storage areas; and
- Banksman locations.

Through the implementation of the detailed CMP prior to the construction stage, it is anticipated that the effect of traffic on the surrounding road network during the construction stage will be minimal.

12.6.3 Operational Phase

The analysis of the road network surrounding the subject site has shown that the existing and proposed junctions will operate well below capacity for the future assessment years with the baseline traffic factored up and the inclusion of the proposed development trips. No upgrades to the existing junctions are warranted to accommodate the proposed development.

However, in order to encourage residents and staff of the proposed development to reduce the dependence on private car and avail of sustainable forms of transport such as walking, cycling and public transport, a Travel Plan has been prepared for the subject development and accompanies the subject application under a separate cover.

The Travel Plan sets out a number of specific actions to be implemented with the objective of promoting sustainability, enhancing public transport and reducing the use of private car, such as:

- Advising residents and staff of the development about the upgraded local pedestrian and cycling network facilities such as dedicated pedestrian crossings, wide footpaths and dedicated cycle lanes;
- Regularly informing residents and staff about the bike to work scheme which may be available from their employers;
- Providing information to residents and staff about tax incentives for public transport users;
- Publicising student LEAP travel cars and associated benefits;
- Advising residents and staff regarding local bus routes and their nearest bus stops, the nearest train station, and the travel time to/from Dublin City Centre, Dublin Airport, Wexford City Centre and other key destinations;
- Providing secure cycle parking within the proposed development;
- Providing information regarding car sharing benefits.

The proposed upgrade works on Kilnahue Lane and R725 Carnew Road improve the pedestrian and cyclist network in the surrounding area. The proposed footpaths and cycle lanes will connect to existing facilities along Kilnahue Lane and R725 Carnew Road which are part of the route towards Gorey town centre and public transport facilities.

12.7 Predicted Impacts

12.7.1 Introduction

The predicted impacts of the proposed development from a traffic and transport perspective at both construction and operational phases are outlined below.

12.7.2 Construction Phase

Provided the above mitigation measures and management procedures outlined in the Construction Management Plan are incorporated during the construction phase, the residual impact upon the local receiving environment is predicted to be temporary in nature and slight in terms of effect.

12.7.3 Operational Phase

The analysis of the road network surrounding the subject site has shown that the existing and proposed junctions will operate well below capacity for the future assessment years with the baseline traffic factored up and the inclusion of the proposed development trips.

The surrounding network can cater for the proposed development trips and the increase in traffic over the baseline conditions will be minimal on the surrounding road network.

The provision of new pedestrian and cycling facilities within the proposed development and externally connecting to the existing network will result in a positive effect on sustainable transport modes.

12.8 Monitoring

12.8.1 Construction Phase

During the construction phase the following monitoring is advised:

- Construction vehicles routes and parking;
- Internal and external road conditions;
- Construction activities hours of work.

The specific compliance exercises to be undertaken in relation to the range of measures detailed in the final Construction Management Plan will be agreed with the Planning Authority.

12.8.2 Operational Phase

During the operational phase, the following monitoring is advised in order to further reduce the already minimal traffic effects predicted from the proposed development:

- Carparking capacity and associated occupancy.
- Cycle parking capacity and associated occupancy.
- Public transport serving Gorey town including location of closest bus stops, train station, service frequency and routes, and commuting times from key towns and cities.

The Travel Plan for the proposed development should be monitored by the Management Company for the apartments and updated at regular intervals. This will enable tracking in terms of reduction in the dependence on private car journeys and a shift towards sustainable transport options such as walking, cycling and the use of public transport.

12.9 Interactions

There may be temporary negative impacts to human health during the construction phase caused by noise, dust, air quality and visual impacts which are covered in other chapters of this EIAR. There may also be interactions with the surrounding water bodies through surface water runoff during topsoil stripping and earthworks which will be required to construct the roads.

The effects of these will be mitigated through the implementation of the measures outlined in Section 12.6 and within the Construction Management Plan.

12.10 Difficulties Encountered

There were no difficulties encountered in compiling the chapter.

12.11 References

- Wexford County Development Plan 2013 – 2019
- Gorey Town & Environs Local Area Plan 2017 – 2023

- Design Manual or Urban Roads and Streets (DMURS), Department of Transport, Tourism and Sport
- Traffic and Transport Assessment Guidelines (2014), National Roads Authority (NRA)/Transport Infrastructure Ireland Publications
- Project Appraisal Guidelines for National Roads Unit 16.1 – Expansion Factors for Short Period Traffic Counts (2016), Transport Infrastructure Ireland Publications
- Transport for Ireland (TFI): www.transportforireland.ie
- Irish Rail Website: www.irishrail.ie

13.0 CULTURAL HERITAGE

13.1 Introduction

This section of the Environmental Impact Assessment Report has been prepared by Courtney Deery Heritage Consultancy. The cultural heritage chapter provides a cultural, archaeological, and architectural heritage background with respect to the proposed development. The proposed development site is located within the townland of Kilnahue, approximately 1.5km west of Gorey, Co. Wexford.

The objective of the chapter is to assess the impact of the proposed development on the receiving cultural, archaeological, and architectural heritage environments and to propose ameliorative measures to safeguard any archaeological monuments, features, finds of antiquity, or features of architectural or cultural heritage merit.

13.2 Research Methodology

The assessment involved a desk-based study, supported by a field inspection, geophysical survey, and targeted archaeological test excavation. A summary of relevant legislation standards and guidelines is contained in Appendix 13.1.

13.2.1 Desk-Based Study

The desk-based study availed of the following sources:

- The National Monuments, Preservation Orders and Register of Historic Monuments lists were sourced directly from the Department of Housing, Local Government and Heritage (DHLGH);
- Record of Monuments and Places (RMP) and Sites and Monuments Record (SMR): the SMR, as revised in the light of fieldwork, formed the basis for the establishment of the statutory Record of Monuments and Places in 1994 (RMP; pursuant to Section 12 of the National Monuments (Amendment) Act, 1994). The RMP records known upstanding archaeological monuments, their original location (in cases of destroyed monuments) and the position of possible sites identified as cropmarks on vertical aerial photographs. The information held in the RMP files is read in conjunction with published constraint maps. Archaeological sites identified since 1994 have been added to the non-statutory SMR database of the Archaeological Survey of Ireland (ASI) (National Monuments Service (NMS), DHLGH), which is available online at www.archaeology.ie and includes both RMP and SMR sites. Those sites designated as SMR sites have not yet been added to the statutory record, but are scheduled for inclusion in the next revision of the RMP;
- Record of Protected Structures (RPS) and Architectural Conservation Areas (ACAs), as listed in the Wexford County Development Plan 2013-2019 and Draft Wexford County Development Plan 2021-2027. The Gorey Town and Environs Local Area Plan 2017-2023 was also consulted;
- National Inventory of Architectural Heritage (NIAH) survey of County Wexford, which was carried out in two phases from 2005-2006 and 2007-2008. This building survey highlights a representative sample, and raises awareness of the wealth of architectural heritage in the county. The NIAH surveys can be reviewed at www.buildingsofireland.ie.

- The topographical files of the National Museum of Ireland, which identify recorded stray finds held in the museum's archive. The finds, which are donated to the state in accordance with national monuments legislation, are provenanced to townland and sometimes include reports on excavations undertaken by NMI archaeologists earlier in the 20th century;
- Excavations Bulletins and Excavations Database (1970-2020), an annual bulletin that contains summary accounts of all excavations carried out annually in Ireland, and can be accessed at www.excavations.ie;
- Published and unpublished documentary sources consulted for this assessment are outlined in the references (section 13.10). A review of historical maps was also undertaken to identify any features of cultural heritage significance within the proposed development site, including historical maps held by the Map Library of Trinity College, Dublin, and available online at www.downsurvey.tcd.ie and on the Ordnance Survey of Ireland's website (www.osi-maps.ie);
- Aerial imagery (Google Earth 2001–2020, Bing 2013; OSI 1995, 2000, 2006).

13.2.2 Site Work

Field Inspection

Field inspection was undertaken to assess current land use, access to the site, local topography and any additional environmental information relevant to the site's appraisal. It also sought to inspect upstanding structures and to identify any potential low-visibility archaeological features and / or previously unknown cultural heritage features that may be present. An archaeological testing strategy across the area of the proposed development site was established as a result of the field walkover survey and baseline research.

Geophysical survey

A geophysical survey was undertaken of the proposed development lands by Target Archaeological Geophysics (Detection licence no. 18R0031) in May 2018 (Nicholls 2018; full report in Appendix 13.4). A high resolution magnetic gradiometer survey was conducted across all available lands situated within the site boundary, undertaking a total 14.2ha of survey in the 4 fields (M1-M4).

Archaeological Test Excavation

Archaeological test excavation was carried out in September 2018 by Courtney Deery Heritage Consultancy Ltd (Licence No. 18E0522; Hickey 2018; full report in Appendix 13.5). The assessment comprised the excavation of 23 test trenches throughout the site, the locations of which were focused on the proposed site layout as it was at the time of testing.

The purpose of the testing was to investigate the anomalies identified in the geophysical survey, to verify the results in areas where no archaeological features were revealed, to assess whether any archaeological remains were present across the proposed development footprint, and to establish the archaeological potential of the development lands.

13.2.3 Rating of Impacts

The assessment of the likely significant impacts on the environment resulting from the construction and/or operation of the proposed development relies on a combination of qualitative and quantitative assessment.

Cultural heritage sites/landscapes are considered to be a non-renewable resource and cultural heritage material assets are generally considered to be location sensitive. In this context, any change to their environment, such as construction activity and ground disturbance works, could affect these sites.

The likely significance of all impacts is determined in consideration of the magnitude of the impacts and the baseline rating of the cultural heritage asset (i.e. its sensitivity or value). Having assessed the magnitude of effect with respect to the sensitivity / value of the asset, the overall significance of the effect is then classified as imperceptible, slight, moderate, significant, or profound. A glossary of impact assessment terms, including the criteria for the assessment of impact significance, is contained in Appendix 13.3.

13.3 The Existing Receiving Environment (Baseline Situation)

13.3.1 Site Location

The proposed development site is located within open undulating fields in the townland of Kilnahue. The townland of Kilnahue is in the parish of Kilnahue, in the barony of Gorey, County Wexford. The proposed site at Kilnahue is situated on the eastern side of a hill, 120m above sea level at its summit. Below it, c.1.5km to its east, is the town of Gorey (at 100m above sea level), to the south is a small valley of open fields into which the land falls before it rises again in the townlands of Coolishal Upper, Moneylawn Upper and Killowen, a valley containing the tree-lined River Bann appears c.1.3km to the west, and nearby to the north the land rises up to a designed landscape in Creagh Upper before falling softly into Ballyrahan and the lower valley lands of Ballingarry Lower (c.100m above sea level).

The most notable landscape features within the environs are hills, which appear to the southwest and northeast. The southwestern hill (at a distance of 1.2km) contains industrial buildings and is used as a quarry, the northeast hill (at a distance of 7.5km) is the cairn topped Tara Hill (253m). Clear views towards the Irish Sea (situated c.8km to the east) are afforded from the summit of the proposed site.

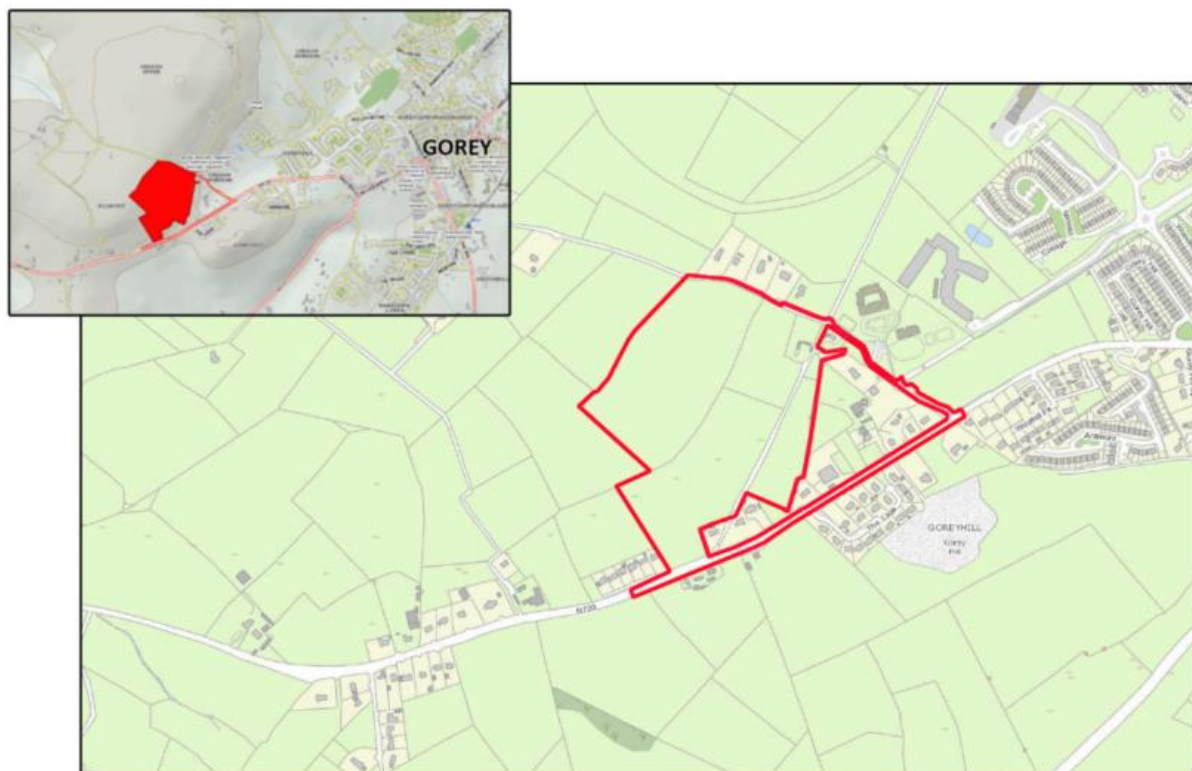


Figure 13-1. Site Location

The site is bounded to the south by Carnew Road (R725) and some residential development, to the east by pasture fields behind residential and commercial development, to the north and northeast by Kilnahue Lane, and to the west by open crop fields, modern farmsteads and dwellings. The proposed development is spread across four irregular-shaped fields (two of pasture, two for crops), and includes an existing northeast/ southwest access road, which is heavily overgrown. The terrain on site is slightly undulating, bounded by mature hedgerow and slopes steadily from the southeast to its summit in the northwest (the site is situated on the eastern side of a hill). A heavily overgrown area measuring approximately one acre is located in the northeastern corner of the site; a vernacular farm yard complex consisting of three upstanding structures is contained within this property plot, defined by tree-lined rubble stone walls.

13.3.2 Site Context

The landscape around Gorey has a wide range of recorded archaeological monuments (RMP / SMR sites), which is well attested in the archaeological record from the prehistoric period through to medieval and post-medieval times, with significant additions to the archaeological record having been made as a result of archaeological investigations on the N11 Arklow-Gorey link road east of Gorey.

There are no RMP / SMR sites within the application lands, but the site of a holy well (RMP No. WX006-062) lies approximately 20m outside the eastern edge of the lands and the zone of archaeological potential for it, as illustrated on www.archaeology.ie, extends into the proposed development area (see Figure 13.3 in section 13.3.2). The 1998 RMP maps show that this site was delisted, but its current status on the [archaeology.ie](http://www.archaeology.ie) Historic Environment Viewer of the National Monuments Service (NMS) indicates that it is currently scheduled for inclusion in the next revision of the RMP and, although there are no current plans to update the RMP for County Wexford, is intended to be relisted. Following

consultation with the Archaeological Survey of Ireland (ASI; a unit within the NMS), it has been advised that the zone of archaeological potential shown on the Historic Environment Viewer should be 40m diameter, and not the 120m illustrated (Michael Moore, NMS Archaeologist, pers. comm, 11th May 2018; the zone has not yet been changed online to reflect this). This would indicate that the zone of archaeological potential does not extend into the application area.

13.3.3 Archaeological and Historical Background

Prehistory

Kilnahue is an undeveloped townland consisting of open agricultural land and a small scattering of modern farmsteads and dwellings situated on the western periphery of Gorey town. Although the emergence of Gorey town is relatively late (it came to prominence in the early seventeenth century as a plantation town), archaeological activity in the area demonstrates a settlement pattern that stretches back to at least the Bronze Age (c. 2500–500 BC).

The cist burial was the most common burial tradition in Early Bronze Age Ireland. In these burials, a crouched inhumation or cremation was placed, accompanied by a food vessel, in a single stone lined box. Cist burials are generally chance finds retrieved during land reclamation projects, quarrying or construction, and in north Wexford such burials are mainly concentrated above the 200ft contour. Burials of this period include that from Gorey Corporation Lands (RMP No. WX007-055) approximately 2km to the east of the proposed development, and that from Ballowen or Ramsfortpark, an area situated approximately 2km northeast of the proposed development, which were both found in gravel ridges. The Ballowen burial was discovered in 1868, and consisted of an Encrusted urn, a large, highly decorated vessel, which was inverted over the cremated remains of a single individual; the site is not precisely located. The Corporation Lands cemetery, found in 1989 by schoolboys digging in a quarry, also consisted of an Encrusted urn and a Vase urn (also a large, heavily decorated vessel, although with incised, rather than applied decoration), inverted over cremated bones (of both an adult male and adult female). Urns are often rather top-heavy, indicating they were made specifically to be inverted over cremations, and had little or no practical or domestic use. There are also records of fragments of a vase food vessel that were found 'near Gorey' in 1887 (Ó Ríordáin and Waddell 1993). Cist burials could be covered with mounds of earth or cairns of stone, although in cases like the burials in Corporation Lands and Ballowen, natural 'monuments' such as gravel ridges performed the same function (after Moriarty, 2007).

The topographical files of the Irish Antiquities Division of the National Museum of Ireland record the discovery of sherds of a vase food vessel provenanced to within the environs of Corporation Lands/Gorey Town in 1887 (NMI ref: 1909:32). The discovery consists of the sherds of a vase food vessel, with unique Irish herringbone design of the middle Bronze Age period 1,900BC- 900BC (Appendix 13.2).

In 2008 an archaeological assessment was carried out on the site of a development at Gorey Hill, situated c.220m west of the boundary of the proposed site. Archaeological testing (Licence No. 08E0415) uncovered two small areas of burnt mound material (diameter. 0.6m and 1.2m) located 2m apart (O'Hara, 2008). This excavation was registered in the SMR (RMP No. WX006-093). The findings are an indication of potential prehistoric activity (i.e. Bronze Age cooking sites). These sites consist of

a circular or irregular mound of material consisting of burnt stones, ash and charcoal with no surface evidence of a trough or depression; and sometimes are referred to as *fulachta fiadh*.

Fulachta fiadh ('burnt mounds', 'burnt spreads' or 'cooking sites') are made up of three main elements: a hearth in which stones were heated; a trough in which water was heated using the stones; and a low mound or flatter 'spread' of the stones, burnt and shattered after use. Besides cooking, a variety of functions have been suggested for these sites, including their use as saunas (Buckley 1990; Barfield and Hodder 1987; Brindley 1989–90), for the washing and dyeing of cloth or wool and for tanning/leatherworking (Brindley 1989–90). In instances where no confirmed trough has been located, the sites are usually assigned the moniker 'burnt mound'— indicating that there is some surviving depth of charcoal ash and fire-cracked stone and/or the site presents as a topographic feature—or 'burnt spread'—implying only a thin depth of surviving archaeology. These sites represent a basic and widely-used kind of technology—the heating of stones as a means of warming, heating or boiling water. They have been called the 'kitchen sinks' of the Irish Bronze Age (Quinn and Moore 2007), an indication of the variety of purposes for which they served. Increasingly, the absence of water at some of these sites may also suggest that heated stones were used for other purposes that did not involve water – for example cooking in an 'earth oven' or 'roasting pit'. Their use as open-air cooking sites has been interpreted as feasting and food-sharing sites among small family groups which was related to social bonding (Hawkes 2015). The majority of *fulachta fiadh* / burnt mounds / burnt spreads in Ireland that have been dated indicate use during the Mid–Late Bronze Age.

Early medieval period

The origin of the name 'Kilnahue' is unclear, the name may derive from '*Cill na hOighe*' or the Church of the Virgin, due to its connection with the Assumption on the 15th of August. The antiquarian John O'Donovan speculated that the name derives from the Church of St. Hugh or Cill Naoimh Aodha, although there was no tradition to indicate this. There were no remains of a church, and the graveyards was described as very extensive and old-looking. A pattern had been held there annually on the 15th of August until it was abolished in 1798 (O'Donovan, O'Keefe & O'Connor 1840, 14).

Christianity was introduced into Ireland in the fifth century AD and brought with it not only writing and recorded history but also a range of new monuments. The best known native monument of this period is the ringfort—the classic Early Medieval (c.500–c.1100 AD) secular settlement type. Ringforts are among the commonest monuments in Ireland, although only around one hundred and fifty survive in County Wexford. They are round or oval enclosures defined by a bank and an external ditch, often situated on gentle hill slopes. Excavation suggests they were defended farmsteads that contained the dwelling house and outhouses of an extended family; some ringforts occasionally have evidence for small-scale industrial activity. Approximately 1.15km to the northwest of the proposed development is a cluster of three ringforts (RMP Nos: WX006-059001, WX006-059002, WX006-085) spread over two pasture fields. These ringforts are not indicated on the first edition 6-inch OS map (1839), nor are they currently visible at ground level. They are however visible as cropmarks of circular enclosures on aerial photography.

Ringforts are one of the most widespread archaeological sites surviving in the Irish landscape. They consist of a circular, sub-circular or D-shaped enclosure of 20–50m diameter. The enclosure is typically

a deep ditch outside of a bank (of earth, or earth and stone) or a drystone wall. They seem to have functioned as farmsteads and served to protect interior dwellings, their inhabitants and the farm's livestock. Often they have associated field systems and sometimes underground souterrains. Most that have been robustly dated were occupied between c. 500–1200 AD. They tend to be situated on, or near, particularly good agricultural land for both pasture and tillage, although in the latter case, they often demonstrate a preference for heavier soils than those that are today considered ideal for arable farming. Ringforts are usually sited on a gentle slope where they have a good, commanding view of the surrounding landscape and are often clustered in small groups. Such clusters typically demonstrate a morphological hierarchy, with a larger, often multivallate, ringfort in the best landscape position surrounded by smaller ringforts often oriented towards the main one.

Often the Irish word 'cill', meaning a church, appears as a root word in townland names where early churches are known to have been founded, as in Kilnahue. A number of potentially medieval or possibly early medieval recorded monuments are located within the vicinity of the proposed site. To the immediate east of the proposed development is a holy well (RMP No. WX006-062), whilst approximately 600m to the northwest is a concentration of sites; a church site, a burial ground, a cross stone, a souterrain and a possible enclosure (RMP Nos: WX006-061001, WX006-061002, WX006-061003, WX006-061004, WX006-060).

The holy well site (RMP No. WX006-062), known as Toberchríost, is just outside the development boundary 20m to the east of the proposed development. A well or spring, though in some unusual cases a natural rock basin, which usually bears a saint's name and is often reputed to possess miraculous healing properties. These may have their origins in prehistory but are associated with devotions from the medieval period (5th-16th centuries AD) onwards. The tradition of carrying out Stations of the Cross here ceased in 1798 (O'Donovan et al. 1840, 14).

The Kilnahue church site and graveyard are of an uncertain date. The church and graveyard site are within a north-facing oval raised enclosure (RMP No. WX006-060), which is surrounded by an earthen bank, revetted by a dry stone wall on its exterior face. The footprint of the church (RMP No. WX006-061001) remains, but is difficult beneath grass cover. It is located on a slightly raised area (up to 1m in height on its northern side) in the centre of the graveyard. The west gable is approximately 6.5m long, with the eastern gable less visible. Approximately 20m of the south wall is faintly discernible, while the north wall appears not to be as long. Where visible the walls are 30cm-50cm high above ground level. A graveyard survey in 2010 recorded that the graveyard contains 321 undated and unnamed stones (customarily taken from a nearby church ruin). There are 126 recorded engraved memorials of 18th and 19th century date. The earliest headstone date is that of a member of the Heydon family in 1716 (although based on the headstone style and lettering it appears to have been erected in the 1740s following the interment of another family member) (Mullin 2011). A feature of the interdenominational graveyard and gravestone is the work of sculptors Dennis Cullen and J. Byrne. Fitzpatrick notes that in 1850, during the Famine, the Reverend Mr. Robinson, curate of the Board of Guardians, informed the Board that in consequence of the great numbers of paupers being buried at 'Kilnahue Churchyard', which was very small, it would be inadvisable to continue burials there in the future. The Board resolved to use Clonattin Cemetery until they gained possession of a plot at the rear of the Gorey Workhouse (*ibid*).

A bullaun stone (RMP No. WX006-061003) is recorded at the site of the church. This stone was not seen during the site inspection in 2016, and the RMP files debate its classification, with conflicting views on whether or not it is in fact a cross base. About 10m to the north of the enclosure in a field across the lane is a hole leading to a souterrain (RMP No. WX006-061004). A field site inspection by the Archaeological Survey of Ireland in 1987 noted that dry stone walling, corbelling and roughly hewn voussoirs were visible. It appears the site was unearthed during ploughing operations in 1986, and had been filled in partly to prevent sheep from falling in. Most souterrains were built in the early medieval period by ringfort inhabitants (c. 500 - 1000 AD) as a defensive feature and/or for storage. This cluster of sites, both religious and habitational, is an indication of early medieval habitation and activity in the area, and evidence of the continuation of the religious tradition up to the 19th century.

Medieval period

North County Wexford would have been relatively inaccessible until the sixteenth century and the few Anglo-Norman settlements in the area suggest that the Anglo-Norman infiltration had not been strong (Loeber & Stouthamer-Loeber 1987), although the entire county was implicated in the early stages of Anglo-Norman activity in Ireland (Colfer 1987). The various elements of society that the Anglo-Normans introduced include boroughs, demesne manors and manorial villages. The introduction of continental monastic orders also followed, including a possible Augustinian friary in Coolgraney Demesne (RMP No. WX003-011). The reform of the Irish church into a diocesan and parochial system, begun in the twelfth century, was greatly boosted by Anglo-Norman settlement in the thirteenth century (Moore 1996).

Following the Anglo-Norman invasion in 1169, Gorey was situated within the major Prendergast fief of Uí Mealla and Kynaloh, the largest fief in the county (Colfer 1987), and to which Pallis motte (RMP No. WX002:019), west of Inch, must have been related. The fief passed to the Roches toward the end of the thirteenth century. As previously alluded to, Gorey may have been a possible borough on Prendergast fief, but would possibly never have been more than just a 'rural borough' with no locational or economic advantages. There is some evidence that there was an Anglo-Norman settlement dating to the thirteenth century - a reference in 1296 to the payment of 13s from 'the community of the town (ville) of Gory' (Hore 1900-11). Nothing further is known of this Anglo-Norman settlement, either way it would appear to have been an insecure outpost as the Kavanaghs and O'Morrroughs were very powerful. As such, the survival of Gorey in the modern landscape must be owed to the seventeenth century plantation. A borough at Courtown may simply have resulted from the need for a port and ready access to England by sea from the north of the county.

Post-medieval period: The Wexford Plantation

The plantation of Wexford was the first colonial settlement undertaken by the Dublin government after the massive introduction of British settlers into Ulster at the beginning of the seventeenth century (Loeber & Stouthamer-Loeber 1987). It was initiated in order to settle the northern part of the county, which had never been fully penetrated following the Anglo-Norman conquest of the twelfth century, and amongst the native Irish, the McMurrrough Kavanaghs, retained a strong presence.

Large tracts of land, ranging from 1000 to 3000 acres, belonging to families of both old Gaelic and Anglo-Norman stock were confiscated, and colonial strong houses, subsequently destroyed in the rebellion of the 1640s, sprang up throughout the barony of Gorey. To shire the north of the county, a fort was built by 1610 as a garrison for troops five miles northeast of Gorey, called Fort Chichester (now named Fortchester). It was built to protect the county against raids from displaced natives, but had passed to private hands by 1618. Access to north Wexford from the Pale was through the pass at Fort Chichester.

In 1605, the district of Gorey became a barony. The Wexford Plantation was to have a plantation town and on the 10th of September 1611 King James I gave directions to that effect. The aim was to populate the north and east of Co. Wexford, similarly to the Northern Plantations. On the 7th of May 1613, 657 of the ancient proprietors of Gorey barony and those of Ballaghkeene and half the baronies of Scarrawalsh, 68,000 acres between the River Slaney and the sea were ruthlessly deprived of their estates. It received its first charter of incorporation in 1619 making it the borough and town of Newborough. According to this charter, it was to consist of a sovereign, twelve burgesses and free common, modelled on the town of Cavan (Hore 1900-11).

As a result a grant of the charter in 1619 was to Dr Thomas Ram, Protestant Bishop of Ferns and Leighlin, responsible for the development of a town, initially called Newborough, and later Gorey. Gorey was laid out on a grid pattern of approximately fourteen acres. The Main Street runs east/ west through the centre; the original town area stretched from Pearse Street to Church Lane, north/ south, and The Avenue to Church Street, west/ east. In common with other plantation towns, Gorey was protected by a defensive network. From the few references to them, it is clear that they were earthen. Ram built an episcopal palace in Gorey town in the market place square in 1610 and moved his seat from Ferns to the new plantation town of Gorey in 1620. When he settled in Gorey it was a primitive location and centred around a Norman Castle on Wexford Street (Fitzpatrick 1986).

Ram later moved to Ramsfort, another plantation site built by his son one mile north of Gorey. When the Bishop died in 1634 his body was buried in the chapel built by him in the town. Rebels burned the Bishop's Palace in 1641 when the town was sacked during the rebellion of that year (part of the Irish Confederate War or the Eleven Years War). Ramsfort was also burnt around this time. It probably stood on the site of the present country house, which was built in 1751. A poll tax account of 1659 recorded that the barony of Gorey totalled 794 people, 107 of whom were English and 687 native Irish. Gorey town itself contained 89 people, with 15 English and 74 Irish individuals (Loeber & Stouthamer-Loeber 1987).

The Ram family, with a modest estate around Gorey remained a prominent landed family into the nineteenth century. The history of Gorey is very much bound up with that of the Ram family. Three successive Ramsfort estate homes were constructed. The first was in the main street of Gorey where the AIB bank now stands; the second, some distance from the present house in the estate, was initially a dower house (.i.e. a moderately large house available within an estate for use by the widow of the estate-owner) built for Colonel Abel Ram in 1758 to the design of George Semple. The property by 1758 appears to have consisted of 566 acres, of which 135 acres was let and 431 "dormant" (Rowe & Scalla 2004). It was at this time that extensive landscaping took place.

A surviving designed landscape (RMP No. WX006-090) is located 150m to the north of the proposed site. This recorded monument is a planned agricultural landscape that falls outside the Ramsfort and Creagh demesne boundary. Covering approximately 115 acres, it is located on the summit of Creagh Hill. A small copse of c. 60m diameter is depicted on the 1839 6-inch OS map as well as later editions of the Ordnance Survey.

This is separated by a berm of approximately 15m width from a surrounding field bank that connects to a north northeast/ south southwest passage spanning the hill. This in turn connects to a wide path of 20-30m width between field banks, called 'The Sweep Walk', which circles the base of the hill. At the summit, an arcing section (c. 80m) of the outer bank survives as a field bank and hedge west-southwest by north-northeast (after RMP file field notes).

No documentation could be found relating to this impressive landscaping feature. A map dating to 1778 (Figure 13.2) shows the 'sweepwalk', and Fitzpatrick (1986, 139) refers to it as a course used by the Ram family for carriage driving (.i.e. a form of competitive horse driving where a two or four wheeled carriage is pulled by a single , pair or four-in-hand team of horses). It is thought to be associated with the Ramsfort estate. This site is not apparent from the surrounding area and is most obvious from aerial photography.

The Ramsfort estate house was destroyed during the 1798 rebellion. Stephen Ram - Abel's son - claimed £5,101 for consequential losses. The present mansion, the third incarnation of Ramsfort, is at a distance of 1.5km to the northeast of the proposed site and was built to the design of Daniel Robertson in 1805. Stephen Ram, who was owner until 1870, was responsible for much of the landscaping, cutting a series of trenches towards a lake within the grounds, and making formal gardens with fountains and steps. The estate passed through a number of owners from 1870 onwards (Rowe & Scalla 2004).

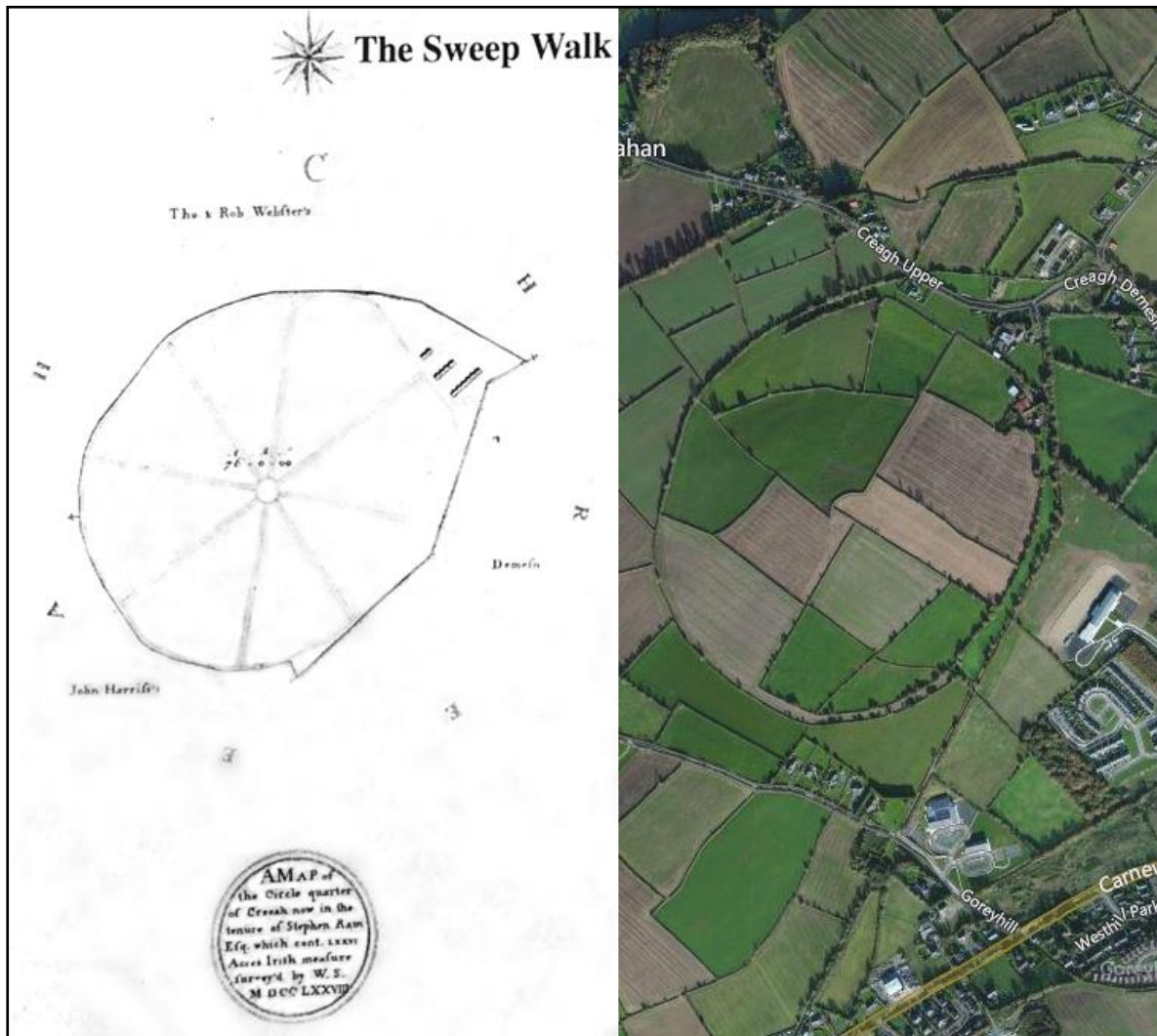


Figure 13-2. Map of Sweepwalk dated 1778 (RMP WX006-090) alongside Aerial ortho photograph (Bing) showing the landscape as it appears today.

13.3.4 Recorded Archaeological Monuments

There are no recorded monuments within the application area, but a holy well (RMP No. WX006-062) is located approximately 20m outside of the eastern boundary of the lands. It was observed during a 1987 visit by the Archaeological Survey of Ireland that the well appeared to have been a natural stream which had silted up and had no sign of any construction around it. This prompted the site to be delisted in the 1998 publication of the RMP. However, the name of the well, *Tobar Chríost* or The Well of Christ, as well as documentary sources (O'Donovan et al. 1840, 14), indicate that it was a veneration site and a genuine holy well (Michael Moore, NMS Archaeologist, pers. comm., 11th May 2018). However, the site is currently depicted on the webmaps of the National Monuments Service with a zone of archaeological potential (Figure 13.3) and is described as being scheduled for inclusion in the next revision of the RMP. This means that the site would be currently delisted in the RMP, but is presently an SMR site, to be reclassified as an RMP should another be published. The associated zone of archaeological potential on the archaeology.ie webmap is the standard size used in the published RMP maps (120m diameter), but this is a technical error, and the actual zone should be only 40m diameter (ibid.). This means that the zone of archaeological potential only touches the boundaries of the application site and does not extend within it.

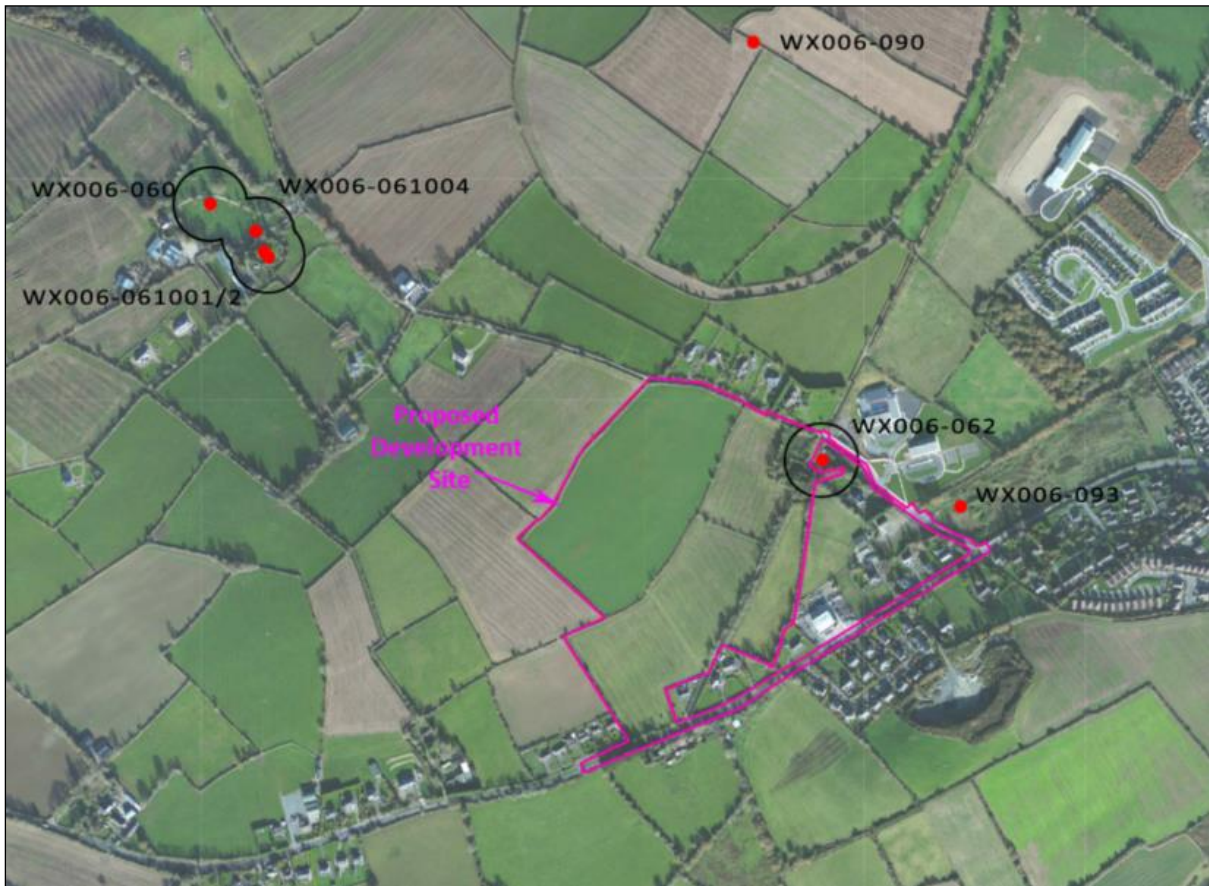


Figure 13-3. RMP sites within 1km of proposed development site

The “well” is known as *Tobar Chríost* (The Well of Christ) and is situated in a waterlogged hollow, in a private garden, with views restricted in all directions by the contours of the hollow and surrounding trees. The ground slopes from the north to the south, a small stream rises and flows off in a southerly direction. The site is recorded in John O’Donovan’s Letters on the antiquities of County Wexford which accompanied the Ordnance Survey in 1840. He noted “a holy well called Tobar Chríost, i.e. the well of Christ, at which Stations were performed about 20 years since on the eve of St. John’s (the 28th of June) and the succeeding week” (Vol 1, p.13).

Other nearby recorded monuments are the burnt mound sites (RMP No. WX006-093) at Gorey Hill, located c.220m west of the boundary of the proposed site, the surviving designed landscape (RMP No. WX006-090) located 140m to the north of the boundary of the proposed site, and the church and enclosure (RMP Nos: WX006-060, WX006-061001, WX006-061002, WX006-061003, WX006-004) 600m to the northwest. In the case of the burnt mounds, they have been excavated under licence 08E0415. Their record is an indication of potential prehistoric activity in the area. The nearby designed landscape (RMP No. WX006-090), which may have functioned as a carriage drive, is an echo of the social history of the 18th century Ascendancy in Ireland. Visibly impressive from the air, the monument does not stand out in the landscape from the roads around the proposed site. These sites and those within 1km are summarised in Table 13.1 below with further information available in Appendix 13.2.

Table 13-1. RMP / SMR sites within 1km of proposed development site

RMP / SMR	Site type	Townland	Poss. Date	Distance
WX006-060	Enclosure	Kilnahue	Early medieval or post- medieval	700m NW
WX006-061001	Church	Kilnahue	Medieval	590m NW
WXD006-061002	Graveyard	Kilnahue	Medieval	570m NW
WX006-061003	Cross	Kilnahue	Medieval	580m NW
WX006-061004	Souterrain	Kilnahue	Medieval	620m NW
WX006-062	Ritual site – holy well	Kilnahue	Early medieval	20m E
WX006-090	Designed landscape feature	Creagh Upper	Post medieval	140m N
WX006-093	Burnt mound	Goreyhill	Bronze Age	220m E

Topographical Files of the National Museum of Ireland

There are no stray finds recorded in the Topographical Files of the National Museum of Ireland from within the proposed development area. Two files relate to artefacts found nearby in Gorey. One of these was a record of fragments of a Middle Bronze Age earthenware vessel with a herringbone design, found in 1887. The other, a stone lamp with a concave base, was noted to have an urn like shape. Neither of these files contained information on the exact location where they were found. Both of these finds are detailed in Appendix 13.2.

13.3.5 Summary of Archaeological Investigations

Field Walkover Survey

The proposed development site is located within open undulating fields of pasture and arable fields on the grounds. The site is bounded to the south by the regional road R725 and some residential development, to the east by pasture fields behind residential and commercial development (consisting of a car showroom and petrol station), to the north and northeast by a local road linking Ballyrahan and Gorey town, and to the west by open arable fields (of turnip) and beyond that some farmsteads and dwellings. The proposed development is spread across four fields and an area of thick overgrowth, and includes an existing northeast/ southwest access road. The terrain is slightly undulating, bound by mature hedgerow and slopes steadily from the south, southeast, east and north to its summit in the west of the site. The site is situated on the eastern side of a hill, the summit of which contains the western boundary of the site.

Of the four fields the southernmost and northeastern fields are arable and at the time of the site visit the crop was recently harvested, the soil was stoney (Plate 13.1). The other two fields located to the southeast and northwest of the site are open pasture fields (Plate 13.2). The north, east and south of the proposed site is defined by a boundary consisting of an earthen bank, thick hedgerow, and intermittent mature trees. This is also the townland boundary of Kilnahue, where it borders the townlands of Creagh Upper (to the north), Creagh Demesne (to the northeast) and Goreyhill (to the east).



Plate 13-1. Northwest facing view from the southern end of the proposed site



Plate 13-2. Northeast facing view from the western boundary of the proposed site (open pasture field and hedgerow visible).

To the northwest, west and southwest c.730m of continuous earthen banked, low hedgerow field boundaries separate the proposed site from its neighbouring agricultural fields. An access road which is depicted on the 1st edition OS mapping of 1839 (Figure 13.8 in section 13.3.5.3), is located to the south of the proposed site. Aligned northeast / southwest the lower third of the road is still in use and enables access to the southernmost field on the site, beyond this the road becomes heavily overgrown and is impassable. The road itself is lined by a mature boundary with intermittent trees.

A heavily overgrown area measuring c.1 acre is located in the eastern corner of the site. The 1st edition 6-inch OS mapping (dating to 1839) and subsequent OS mapping showed three structures set within a rectangular property plot in this area (Figures 13.8 & 13.9 in section 13.3.5.3). Field inspection revealed that the property boundary was still intact and consisted of the remains of a 1.4m in height rubble stonewall facing an earthen bank overgrown with mature trees. Mature beech trees were intermittent amongst the thick overgrowth of brambles and hawthorn which have overtaken the plot of land.

Within the overgrown plot are the remains of the three structures shown on the mapping, making-up a modest mid-19th century vernacular farm-yard complex. The complex has a three-sided courtyard layout sited on the northern side of a former road (i.e. the overgrown and impassable access road mentioned above). The site is almost entirely overgrown and as such was difficult to access and survey. An examination of the OS mapping shows little on site development between 1839 and 1897. An additional north/ south linear outbuilding appears to the south of the complex on the 25-inch OS map of 1897. A gap between the two linear buildings to the west is seen on the 25-inch OS map of 1897. It is possible that structurally this gap existed in the 1830s but was overlooked in the mapping of the 6-inch OS map of 1839.

The complex comprises a 1.5 storey, three bay, single storey with loft, lobby entrance cottage (Plate 13.3). It has red brick window surrounds (Plate 13.9). The single pile cottage has three rooms: off the entrance lobby to the left is the kitchen, the largest room, and to the right is a parlour. There are a further two very small rooms off the kitchen to the left (Plate 13.4). The internal and external doors are still on site. It has a large kitchen hearth opening with a stone hood (Plate 13.5) and a built-in domed red brick wall oven (Plate 13.6) and a keeping hole and lies back to back with a smaller fireplace in the adjacent parlour room to the right (Plate 13.7). A partially collapsed wooden stairs in the left hand corner of the kitchen leads to a loft which features a window in its north facing gable end (Plate 13.8). The roof could not be seen but slates were found on the ground. A red-brick lined window is seen to the right of the cottage entrance (Plate 13.9). Adjacent to the dwelling is the roofless ruin of an outbuilding filled with rubble and roof tiles (Plate 13.10). Perpendicular to the ruin is a long barn (stone rubble and mud construction – Plate 13.11) with a wooden subdivision (Plate 13.12); some of the original unhewn roof timbers survive, it has a replacement corrugated iron roof. The original farm entrance from the former road was present. This area was heavily overgrown.



Plate 13-3. Lobby entrance to cottage (left), and Plate 13.4 Two small rooms off kitchen in cottage (right).



Plate 13-4. Kitchen hearth within cottage (note square keeping hole to the top left)



Plate 13-5. Built-in domed red brick wall oven.



Plate 13-6. Entrance from lobby, window and fireplace in the adjacent parlour room to the right.



Plate 13-7. Window in north facing gable of loft.



Plate 13-8. Red-brick lined external cottage window.



Plate 13-9. Roofless ruin of the outbuilding adjacent to the cottage.



Plate 13-10. Gable end of long barn – stone and mud construction



Plate 13-11. Wooden subdivision in long barn and original roof truss.

Geophysical investigations within the proposed development site

A geophysical survey was undertaken of the four fields within the proposed development site (Fields M1-M4) by Target Archaeological Geophysics (Detection licence ref: 18R0031) in May 2018 (Nichols 2018, Appendix 13.4). A high resolution magnetic gradiometer survey was conducted across all available lands situated within the site boundary, undertaking a total 13.2ha of survey in the 4 fields (M1-M4, Image 13.4). The results are summarised below using the geophysical survey field numbers M1 to M4.

Field M1

No responses of definite archaeological character are indicated by the results from survey in M1. A linear response extending NW-SE across the north-eastern extremity of the field is expected to represent a possible former land division or plough share. The locations of two former land divisions are also indicated. Small-scale positive responses are also visible in the results, whilst having a potential archaeological origin, the results suggest they most likely represent a combination of soil/geological variation, effects from recent landuse and/or modern ferrous.

Field M2

No responses of definite archaeological character are indicated by the results from survey in M2. The results from this location are dominated by patterns of former cultivation on NW-SE and NE-SW

alignments, with further zones of natural soil/geological variation to the S and SE and former land divisions. Isolated responses of limited archaeological potential and likely derive from a combination of natural/soil geological variation, effects from recent landuse and/or modern ferrous. The potential significance of weak linear trend west of survey centre should not be dismissed.

Field M3

No responses of definite archaeological character are indicated by the results from survey in M3. The results highlight patterns of former cultivation continuing across much of M3, with levelled land divisions and natural soil/geological variations also recorded. Small-scale positive responses and weak trends, similar to those noted in M1-M2, have been recorded. Whilst an archaeological interpretation for these anomalies should not be dismissed, the absence of any clear archaeological patterns in the data suggests a natural/soil geological, recent landuse and/or modern ferrous origin more likely.

Field M4

The results from survey in M4 display responses which are similar in form to those recorded from survey in M1-M3, and highlight remains of former cultivation on NW-SE and NE-SW alignments, remnants of past land divisions, with further small-scale positive anomalies at survey centre, and to the south.

Conclusions

The results from survey within the proposed development boundary highlight responses which are indicative of former cultivation, disused land divisions, and natural soil / geological variation. No definitive patterns of archaeological settlement, enclosure remains, or concentrations of archaeological activity have been recorded from this survey.

Given the absence of any characteristic archaeological patterns in M1-M4 these poorly defined small-scale responses are expected to be of limited significance, and a natural soil/geological, recent landuse or modern ferrous origin is expected for the majority.

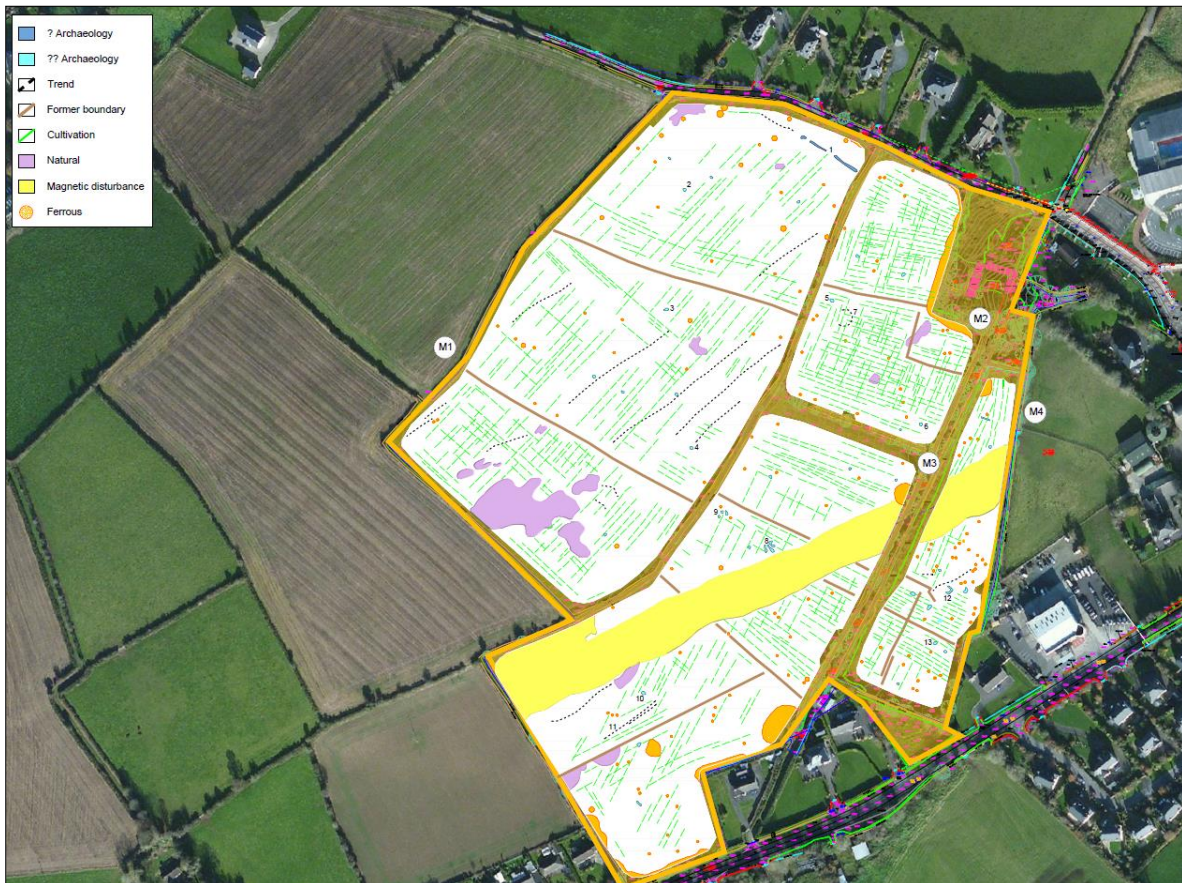


Figure 13-4. Geophysical survey interpretation drawing

Archaeological testing within the proposed development site

Archaeological test excavation was carried out by Courtney Deery Heritage Consultancy Ltd on the 25th to the 28th of September (Licence No. 18E0522; Hickey 2018, Appendix 13.5). The assessment comprised the excavation of 23 test trenches across the footprint of the proposed development (Figure 13.5). The purpose of the testing was to:

- investigate anomalies identified in the geophysical survey;
- to verify the results in areas where no archaeological features were revealed;
- to assess whether any archaeological remains were present across the proposed development footprint; and
- to establish the archaeological potential of the development lands.

The test trenches provided a general understanding of the varying depths of natural subsoils, extant deposits and the presence of disturbed modern layers on site, and in the case of five of the trenches archaeological features and deposits were uncovered. These features indicate archaeological activity in this area and as such the potential to find further archaeological deposits or features within the proposed development site.

The results of the geophysical survey highlighted “responses which are indicative of former cultivation, disused land divisions, and natural soil / geological variation. No definitive patterns of archaeological settlement, enclosure remains, or concentrations of archaeological activity have been recorded” (Nichols 2018, Appendix 13.4). As such the test trenches were positioned to investigate a broad spread

of the proposed development site and also to target the small number of anomalies, trends, and potential archaeological features identified in the geophysical survey interpretation (Figure 13.5). In some case the anomalies proved to be natural and non-archaeological in nature. Archaeological features appeared in five of the 23 test trenches: T2, T15, T16, T17, and T20. These trenches are spread across the proposed development area, being central (T15), to the north (T2), to the east (T20), and to the south (T17 and T18).

The archaeological assessment uncovered a total of ten archaeological features (Table 3 in Hickey 2018, Appendix 13.5), five of which were concentrated in a single trench (T15) which is located at the centre of the proposed development site (Figure 13.5). The features uncovered in T15 may represent evidence of kiln activity. Further archaeological findings in trenches T2, T17, T18, and T20 appeared as isolated features. A number of these features extended into the trench baulk and their full extent is not clear; the dimensions given below relate to what was exposed within the trench, with depths informed by slot trenches dug into the features by the testing archaeologist:

- Trench T2 contained an oval pit (C6: dimensions 3m (NNE-SSW) x 1m (NW-SE) x 0.12m depth) with inclusions of charcoal and burnt clay; this feature extends into the baulk;
- Trench 17 contained pit (C14: dimensions 2m (N-S) x 0.4m (E-W) x 0.15m max depth) containing small flecks of charcoal; this feature extends into the baulk;
- Testing works in Trench 18 uncovered an arc of nine stakeholes (C17: diameter 6-10cm) and a larger stakehole (C18) 5m to the north. The arc of stakeholes (C17) extends into the baulk and there is a likelihood of further features. The final trench to reveal any archaeological features was T20, which contained a NE-SW oriented linear feature (C20: dimensions 0.6m width, 1.4m length); this feature extends into the baulk and corresponds with a 7m E-W oriented linear feature identified on the geophysical survey.

There is a likelihood that additional archaeological features are present in the immediate proximity of the features identified.

A series of agricultural features of uncertain date, such as land drains, field boundary and furrows were noted throughout the site, the locations and dimensions of which were recorded. T21 and T21A revealed construction debris and rubble deposits under topsoil, these deposits resulted from the induction of material in the latter half of the 20th century.

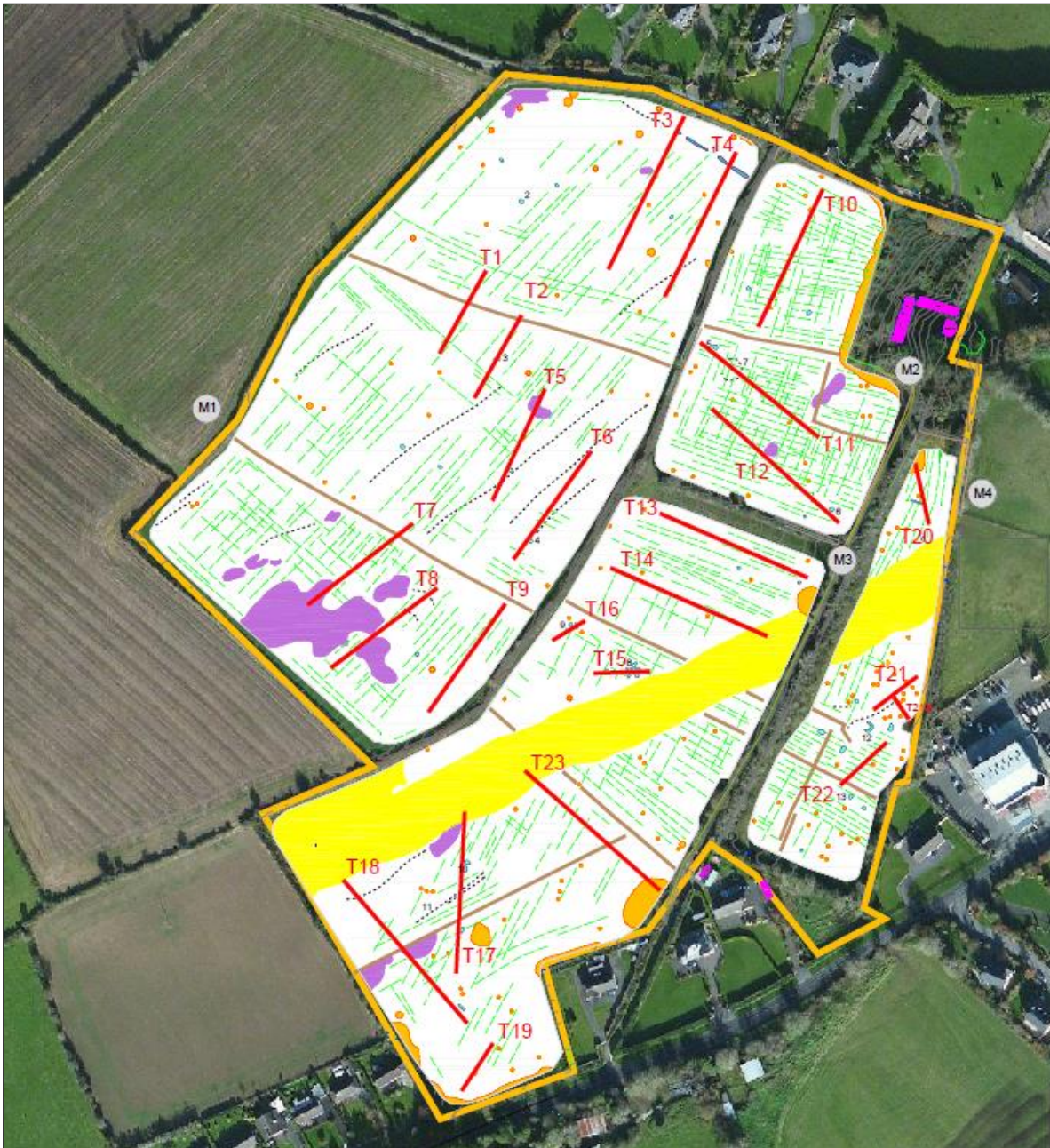


Figure 13-5. Geophysical survey interpretation drawing showing test trench layout

Previous archaeological investigations in the vicinity of the proposed development site

Under licence number 07E0766 archaeological monitoring brief of ground investigations in advance of the Gorey main drainage scheme. These works were undertaken intermittently from 17 July to 13 September 2007 across thirteen townlands, passing through Kilnahue townland. Works consisted of the excavation of 25 slit-trenches, 25 trial pits and 3 boreholes to characterize the stratigraphy and locate services around the town. The exact location of these works have not been established. No archaeological remains were encountered during groundworks; however, it was stressed within the report that due to the limited nature of the current phase of works, the presence of archaeological features in the area through which the scheme passed could not be discounted (Shine, 2007).

Under licence number 08E0415 an archaeological assessment was carried out on the site of a development at Gorey Hill, Gorey, c. 220m to the east of the boundary of the proposed development. A total of eleven test-trenches were excavated and two archaeological features (burnt-mound spreads) were discovered towards the western extent of the site during the assessment. No other archaeological remains were discovered (O'Hara, 2008). The burnt mounds are recorded as RMP WX006-093.

13.3.6 Architectural Heritage

There are no structures listed in the record of protected structures (RPS sites) in the County Wexford Development Plan (2013-2019) or Draft Wexford County Development Plan 2021-2027. The closest protected structures are in Gorey town, over 1km from the proposed site. An examination of the National Inventory of Architectural Heritage (NIAH) also revealed no structures within or in the immediate environs of the proposed development site.

There are numerous historic buildings in the neighbouring areas, many of which date to the 18th to 20th centuries. These include cottages, houses, shops, farm complexes, outbuildings, forges and inns. These structures, built by local people with local materials, are known as 'vernacular' buildings and contribute positively to the landscape and help to establish a distinctive character for a particular area. The nearby town of Gorey contains 117 structures and features of architectural merit listed on the NIAH. The majority of structures listed date to the early and mid-19th century, and are rated with a regional status.

On a grander scale, there are a number of manor houses and demesnes with origins in the late 18th century located within the wider landscape, for example, Carrigbeg House is to the southwest, the former Creagh Demesne is to the northeast and the Ramsfort estate is to the east. Traditionally demesne sites incorporate and manipulate the rural landscape through planting and design, and dictate approaches, views and settings. The landscaping often centres on principle structures and houses. A surviving designed landscape feature (RMP WX006-090) is located 150m to the north of the proposed development site and is described in detail in the archaeological and historical background in section 13.3.2.

The field inspection identified three dilapidated vernacular structures in an overgrown property plot within the footprint of the proposed development site. These structures represent the remains of a farm yard complex depicted on the 1st edition 6-inch OS mapping of 1839. The structures are described in the field walkover survey summary in section 3.3.3.1 above. The buildings were subsequently inspected by Michael Connolly Architects, an accredited conservation architectural practice. The report is included as Appendix 13.6 (A) and concluded the following:

- The buildings are of a type commonly in existence in the general area of North Wexford. There are many existing examples in good condition which better represent this particular type of vernacular construction;
- After clearance, much of the fabric remains partially overgrown and vegetation has become bound into the fabric of the buildings. Some of the elements may become structurally unstable once vegetation is removed;
- The existing roofs are missing, and only partial remnants exist at the site;

- The dilapidated domestic features within the building are not unique and there is no particular cultural heritage benefit in conserving or restoring them;
- The ruined buildings are not of sufficient architectural or historical merit to recommend their retention;
- Since the structures are not designated or listed for protection, and a full record of the structures has been made, their demolition should be allowed to facilitate the proposed development.

A full photographic record of the structures was made, and a measured digital survey was undertaken (Appendix 13.6 (B)).

13.3.7 Cultural Heritage

Townland Boundaries

Townlands are land divisions that form a unique feature in the Irish landscape, their origins can be of great antiquity, and many are of pre-Norman date. They existed well before the establishment of parishes or counties. Townland boundaries can take the form of natural boundaries or routeways as well as artificially constructed earthen banks and ditch divisions. They are predominantly formed of substantial boundaries which are usually distinguishable from standard field division boundaries. There are 62,000 townlands in Ireland, grouped into civil parishes, baronies, then counties and finally provinces.

The proposed development area is contained by the townland boundaries between Kilnahue and four other neighbouring townlands, including Creagh Upper, Creagh Demesne, Goreyhill and Coolishal Lower. In the case of the division with Goreyhill, this also forms the boundary between the parishes of Kilnahue and Kilmakilloge. These boundaries are composed of lines of mature trees.

Placenames

The toponymy of an area can be a valuable indicator of the type of cultural heritage within the local area. Placenames are an invaluable source of information not only on the topography, land ownership, and land use within the landscape, but also on its history, the archaeological monuments and the folklore. Where a monument has been forgotten or destroyed, a place name may still refer to it, and may indicate the possibility that the remains of certain sites may survive below the ground surface. A variety of place names, whether of Irish, Anglo-Norman, and English origin and the appearance of the different languages is often a good indicator of the cultural heritage, and therefore the archaeological record of the area.

The name of Kilnahue suggests the site of an early church in this area. It has been suggested that the name may derive from Cill na hOighe (The Church of the Virgin), given the tradition of patterns at the Feast of the Assumption on the 15th of August. The devotion of an Early Medieval church to the Virgin Mary would, however, be unusual. The antiquarian John O'Donovan speculated that the name derives from the Church of St. Hugh or Cill Naoimh Aodha (O'Donovan et al. 1840, 14, and although there was no tradition to indicate this, it is more likely that the name refers to an Irish saint.

The name of Creagh is recorded as early as 1570 in the Calendar to Fiants of reign of Henry VIII to Queen Elizabeth 1558-1603, but parts of the townlands which bear that name were also known until

the 17th century as Ballyloghnan, which may indicate a small settlement. Coolishal is derived from *An Chúil Íseal Íochtarach* (The Bottom Corner), probably referring to its low altitude at the “back” of a series of hills.

Cartographic Sources

Down Survey of Ireland, c.1656

The Down Survey is a mapped survey dating to the 1650s. These maps, made at a scale of 40 perches to one inch (the modern equivalent of 1:50,000), were the first systematic mapping of a large area on such a scale attempted anywhere. The site of the proposed development on the barony map for Gorey (Figure 13.6) is situated on “Unfortified Land” within the parish of “Killinugh”. The fortified town of “Gorey” is seen within the parish of “Kilm’Logue”, the town was protected and formed a square, as seen on the Down Survey map of 1656-8. The ramparts of Gorey town are mentioned in passing in the Corporation records for 1708, while those of 1713 note the construction of a causeway along the rampart to the churchyard (Hore 1900-11). The fact that the town was captured easily in 1641 suggests that the defences were never particularly strong.

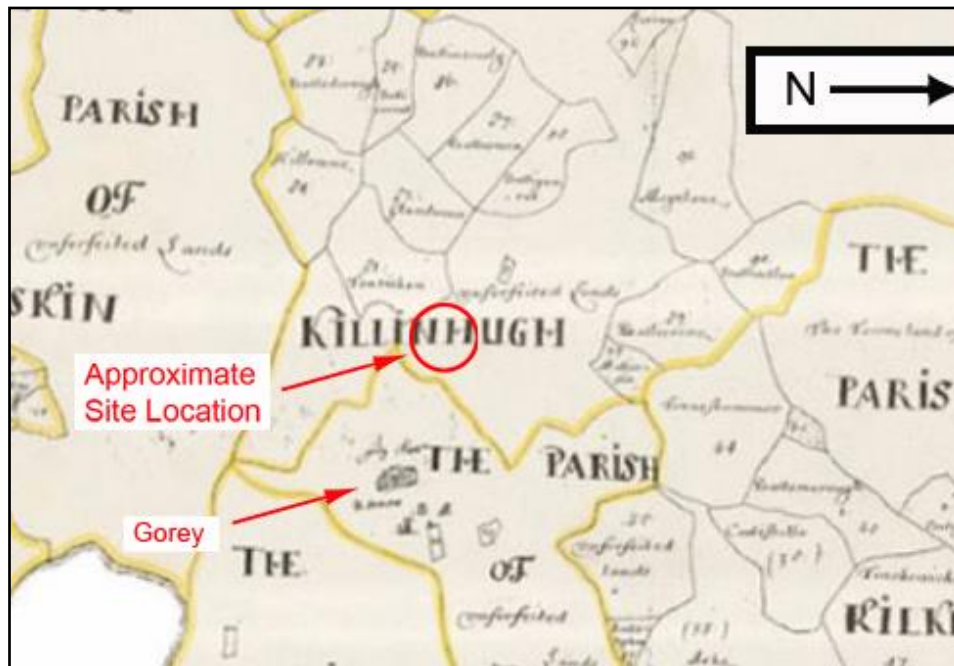


Figure 13-6. Down Survey map of the barony of Gorey, c.1656.

Taylor and Skinner's Maps of the Roads of Ireland, 1777

George Taylor and Andrew Skinner were surveyors who in 1777, having surveyed the roads of Scotland, as well as the post roads from London to Bath, set about completing a survey of the roads in Ireland. Gorey town and its environs appears on Map 142 “From Dublin to Wexford” (Figure 13.7). In relation to the parish of Kilnahue no features are recorded and the area is undeveloped. The gridded town of Gorey is seen to the east of the proposed site location. Ramsfort is depicted to the northeast.

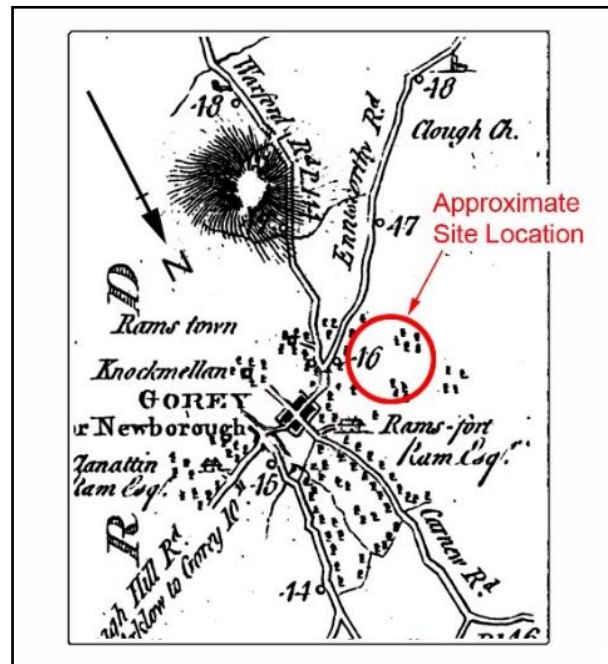


Figure 13-7. Taylor and Skinner's Maps of the Roads of Ireland, 1777

19th century Ordnance Survey Maps

A scaled map of Kilnahue is presented on the 1st edition 6-inch OS map of 1839 (Figure 13.8). The majority of the site is open fields, separated into 10 smaller fields. The townland boundary of Kilnahue (shown in red on the historic map) is seen along the border of the north, east and south (partially) of the proposed site. The road into Gorey town runs along the south side of the site, on its present alignment. A property plot is located within the eastern boundary of the site containing a farm yard complex (the remains of these buildings survive and are described in section 13.3.3.1 above; see also section 13.3.5). An access road and perpendicular path off it provided access to the farmyard and fields (within the proposed site). Intermittent trees are depicted along the field boundaries. No formal road linking Ballyrahan and Gorey town borders the site to the northeast; at this stage it appears to only be a local path.

The holy well site (RMP WX006-062) is seen to the east of the eastern site boundary and is depicted as Toberchríost. The designed landscape (RMP WX006-090) is located 150m to the north of the proposed site, the "Sweep Walk" is clearly marked. Kilnahue's oval graveyard (RMP WX006-061002) is depicted 600m to the northwest, the church (RMP WX006-061001) already in ruins, is not depicted. A number of isolated farmsteads and outbuildings appear throughout the wider landscape at a distance from the proposed development. The area and its environs are rural and very under-developed.

Very little development has occurred in the intervening 58 years between the two map editions. The only changes of note on the 25-inch map of 1897 (Figure 13.9) are a southern roadside outhouse in the farmyard complex within the proposed site and the development of a local road linking Ballyrahan townland and Gorey town is now marked out, and borders the site to the northeast.

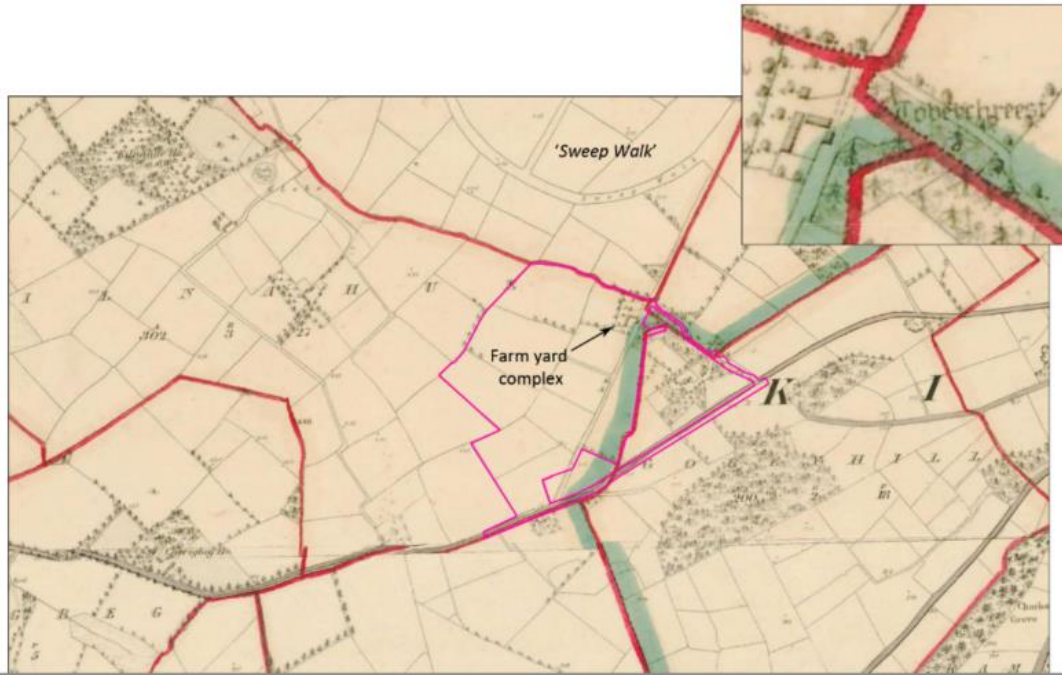


Figure 13-8. First Edition OS 6-inch Map, 1839, showing approximate site location in pink, with inset showing detail of farm yard complex and holy well.

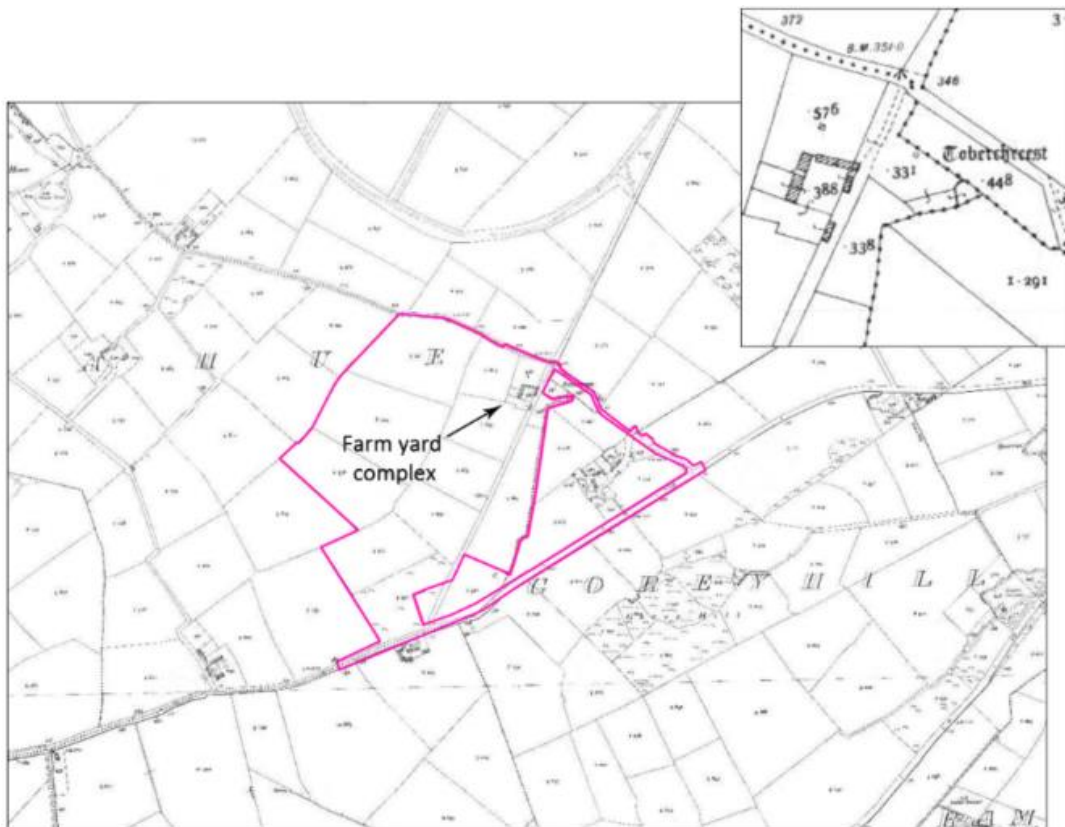


Figure 13-9. 25-inch OS map, 1897, showing approximate site location in pink, with inset showing detail of farm yard complex and holy well.

13.4 Characteristics of the Proposed Development

A proposed Strategic Housing Development consisting of the demolition of the dilapidated structures on site and the construction of 421 no. residential units comprising duplex units, apartment units, and

houses, all with associated car parking; a creche facility with outdoor play areas, 2 no. retail units and 2 no. community rooms, all with associated car parking; a new vehicular access onto Carnew Road (R725) and associated road upgrade works, new vehicular accesses onto Kilnahue Lane (L10112) and associated road upgrade works; landscaping including neighbourhood park, pocket parks, a playground and multi-purpose sports court; boundary treatments; public lighting; and all associated engineering and site works necessary to facilitate the development including proposed upgrade works to existing engineering infrastructure on Carnew Road, Kilnahue Lane, Main Street and Esmonde Street.

13.5 Potential Impact of the Proposed Development

13.5.1 Archaeology

There are no recorded archaeological monuments within the proposed development site. A holy well site lies c. 20m outside of the proposed development site, within a private garden (RMP No. WX006-062). The site will not be impacted by the proposed development. This site was previously delisted from the Record of Monuments and Places by the National Monuments Services and it is under consideration to be relisted to any future update of the record. A combination of geophysical survey and archaeological testing, under licence to the Department of Housing, Local Government and Heritage (DHLGH) was carried out at the earliest stages of the development design in order to establish the nature, significance, context and character of the archaeological heritage within the proposed development site. No large sites of archaeological significance were identified, though the testing did identify some isolated sites and features of archaeological potential: an oval pit in field M1 (T2), a kiln and associated features, a pit, and a series of stakeholes in field M3 (Trenches T15, T17, T18). Field M4 in contrast was very disturbed. The features found during testing indicate some archaeological activity in this area and as such there is the potential to find further isolated and discrete archaeological deposits or features within the proposed development site. Groundworks associated with the proposed development will result in a negative, moderate, permanent impact on the features identified during testing.

13.5.2 Architecture and Cultural Heritage

There are no RPS or NIAH sites located within or in the vicinity of the proposed development site. The ruined vernacular buildings identified within the proposed development site are not designated or listed for protection. An inspection carried out by a conservation architect concluded that they are not of sufficient architectural or historical merit to recommend their retention; the report is contained in Appendix 13.6 (A). A full photographic record of the structures was made and a measured digital survey was undertaken (see Appendix 13.6 (B)). Given these facts, the demolition of these buildings should be allowed to facilitate the proposed development.

13.6 'Do Nothing' Impact

If the proposed development were not to go ahead, there would be no impact on the sub-surface archaeological features. The 19th century vernacular buildings within the site would continue to deteriorate.

13.7 Avoidance, Remedial & Mitigation Measures

The isolated sites and features of archaeological potential identified by testing will be fully excavated in advance of the development. This mitigation measure is appropriate to the nature and scale of the features identified during the testing and is in accordance with best practice.

Archaeological monitoring of groundworks associated with the proposed development will be undertaken by a licensed archaeologist. This will ensure the full recognition of, and the proper excavation and recording of, all archaeological soils, features, finds and deposits which may be disturbed below the ground surface. All archaeological issues will have to be resolved to the satisfaction of the DHLGH and the NMI. The archaeologist will have provision to inspect all excavation to natural soil level and to temporarily halt the excavation work, if and as necessary. They will be given provision to ensure the temporary protection of any features of archaeological importance identified. The archaeologist will be afforded sufficient time and resources to record and remove any such features identified.

The attention of the developer has been drawn to the relevant portions of the National Monuments Acts (1930-2004), which describes the responsibility of the site owners to report the finding of archaeological items if any should be discovered during construction works to the National Museum of Ireland (Irish Antiquities Division) and the National Monuments Service of the DHLGH who will determine the nature and extent of archaeological work to be carried out on site. This legislation also outlines the developer's obligation to facilitate and fund all archaeological works that may be considered necessary by the National Monuments Service or the National Museum in respect of development proposals.

No further mitigation measures are required with regard to architectural heritage.

13.8 Monitoring

No post-construction monitoring will be required for the proposed development.

13.9 Reinstatement

No reinstatement will be required in relation to the proposed development.

13.10 Interactions

No interactions are predicted in relation to the proposed development.

13.11 Difficulties Encountered in Compiling

No difficulties were encountered in compiling this report.

13.12 References

Publications:

- Bradley, J. and Halpin, A. (1986) *The Urban Archaeological Survey of Gorey, Co. Wexford. (OPW)*
- Colfer, B. (1987) *Anglo-Norman settlement in County Wexford. In Wexford: History and Society, ed. K. Whelan and W.Nolan Geographic Publications, Dublin.*
- Fitzpatrick, M. (1986) *Clonattin in the Fields, Armstrong Printers, Gorey.*
- Fitzpatrick, M (1986) *Historic Gorey Vols 1- 4, Hogan Print.*
- Hickey, S. (2018) *Archaeological testing report, Kilnahue, Gorey, Co. Wexford. Excavation Licence Ref. 18E0522. Courtney Deery Heritage Consultancy Ltd, unpublished report.*
- Hore, P. H. (1911) *History of the Town and County of Wexford, Elliot Stock, London.*
- Lewis, S. L. (1837) *A Topographical Dictionary of Ireland, Vol. II. S. Lewis & Co. London.*
- Loeber & Stouthamer-Loeber (1987) *The lost architecture of the Wexford Plantation. In Wexford : History and Society, ed. K. Whelan and W.Nolan Geographic Publications, Dublin.*
- Moriarty, Colm (2007) *Archaeological Testing Report, Ramstown Lower, Gorey, Co. Wexford. Unpublished report for Margaret Gowen and Co. Ltd.*
- Mullins, G. (2011) *Kilnahue Churchyard Gorey – a survey of the iconography and inscriptions. Gorey Churchyard Heritage Group, Gorey.*
- Nicholls, J. (2018) *Geophysical survey report, Lands at Kilnahue, Gorey, Co. Wexford. Detection Licence 18R0031. Target Archaeological Geophysics Ltd, unpublished report.*
- O'Donovan, J., O'Keefe, P. & O'Connor, T. (1840) *Ordnance Survey Letters: Wexford. Volume 1. Royal Irish Academy: Dublin. Available at: http://www.askaboutireland.ie/aai-files/assets/ebooks/OSI-Letters/WEXFORD%20VOL%201_14%20G%2017.pdf*
- Rowe, D. & Scalla, E. (2004) *Historical Genealogical and Architectural Notes on Some Houses of Wexford. Ballinakella Press, Clare.*
- Tunney, M. (ed.) (1996) *The Archaeological Inventory of Wexford, Government Publications, Dublin.*

Online Resources:

- www.archaeology.ie
- www.census.nationalarchives.ie
- www.downsurvey.tcd.ie
- www.excavations.ie
- www.logainm.ie
- <http://map.geohive.ie/mapviewer.html>

14.0 MATERIAL ASSETS - UTILITIES AND WASTE

14.1 Introduction

This Chapter has been prepared by Downey in conjunction with Waterman Moylan Consulting Engineers and describes the material assets - Utilities and Waste, that are potentially impacted by the proposed Project at Kilnahue, Gorey. Material assets are resources that are valued and intrinsic to the site of the proposed Project and surrounding environs. Material assets may be of either natural or human origin and the value may arise for economic or cultural reasons.

This Chapter considers and assesses the effects of the proposed Project on the material assets, including major utilities within and around the site during the construction and operational phases such as built services (i.e. gas, electricity, telecommunications, etc.) and waste management. Water, Roads and Traffic are also counted as material assets and are assessed under separate chapters of this EIAR. The EPA Guidelines (Draft 2017) state that:

“The meaning of this factor is less clear than others. In Directive 2011/92/EU it included architectural and archaeological heritage. Directive 2014/52/EU includes those heritage aspects as components of cultural heritage. Material assets can now be taken to mean built services and infrastructure. Traffic is included because in effect traffic consumes roads infrastructure. Sealing of agricultural land and effects on mining or quarrying potential come under the factors of land and soils.”

Given the importance of Archaeological and Cultural Heritage and noting established EIA best practice within Ireland, the Archaeological and Cultural Heritage has been comprehensively considered and assessed as a standalone chapter within this EIAR. For further information in this regard, please refer to Chapter 13. In addition, water and road infrastructure have been assessed in Chapter 7 and Chapter 12 respectively by Waterman Moylan Consulting Engineers, whilst Land and Soils have been assessed in Chapter 6 by Waterman Moylan Consulting Engineers.

A site-specific preliminary Construction and Demolition Waste Management Plan (CDWMP) has been prepared by Waterman Moylan Consulting Engineers to deal with waste generation during the construction phase of the proposed Project and is included as part of the application packs. This document was prepared in accordance with best practice guidelines. Operational waste management will be managed by the management companies on site and the appointed licenced waste contractor which will ensure the sustainable management of domestic and commercial waste arising from the development in accordance with legislative requirements and best practice standards. A site-specific Operational Waste Management Plan has been prepared by Enviroguide Consulting for the proposed Project and is included as part of the application packs.

14.2 Research Methodology

14.2.1 Desktop Study

This chapter has been prepared in accordance with the requirements of the following statutory documents which were consulted in the course of the study:

- Environmental Protection Agency (EPA), Guidelines on the information to be contained in Environmental Impact Statements (March 2002);

- EPA, Advice Notes on Current Practice (in the preparation of Environmental Impact Statements) (September 2003);
- EPA, Advice notes for preparing Environmental Impact Statements (September 2015);
- EPA, Guidelines on the Information to be contained in Environmental Impact Assessment Reports (August 2017)
- Circular Letter PI 1/2017: Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive)
- The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018)
- Waste Management Acts 1996 -2001 and associated Regulations
- Protection of the Environment Act 2003 (as amended)
- Litter Pollution Act 1997 (as amended)
- Eastern-Midlands Region (EMR) Waste Management Plan
- Waste Management: Changing Our Ways (1998)
- Preventing and Recycling Waste: Delivering Change (2002)
- Taking Stock & Moving Forward (2004)
- National Strategy on Biodegradable Waste Management (2006)
- A Resource Opportunity Waste Management Policy in Ireland (2012)
- Southern Region Waste Management Plan 2015-2021
- Wexford County Council (Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws, 2018

The study was also informed by site visits over the course of topographical surveying of the application site, the sourcing of utility information/records from the relevant service providers, and an analysis of the resources consumed, and an estimation of waste generated by the proposed Project at both the construction and operational phases.

14.2.2 Rating Impacts

Material assets are generally considered to be location sensitive. The likely significance of all impacts is determined in consideration of the magnitude of the impact and the baseline rating upon which the impact has an effect (i.e. the sensitivity or value of the material asset). Having assessed the magnitude of impact with respect to the sensitivity/value of the asset, the overall significance of the impact is then classified as imperceptible, slight, moderate, significant, or profound. The criteria for the assessment of impact significance are as per that set out in the relevant EPA Guidelines and in accordance with the EIA Directive.

14.3 Baseline Environment

14.3.1 Site Location and Context

The subject site is located to the south-west of Gorey Town Centre between the Kilnahue Lane and Carnew Road (R725). The lands are bounded to the south by the regional road R725 and some residential development, to the east by pasture fields behind residential and commercial development, to the north and northeast by a local road linking Ballyrahan and Gorey town, and to the west by open crop fields and beyond that some modern farmsteads and dwellings.

The surrounding area is characterised by detached dwellings on single plots, as well as smaller-scale residential developments in a variety of designs and layouts, particularly along Carnew Road, the R725. The site slopes from west to east, towards the town and from north to south. The site's boundaries comprise of native hedgerows with a number of trees interspersed throughout.

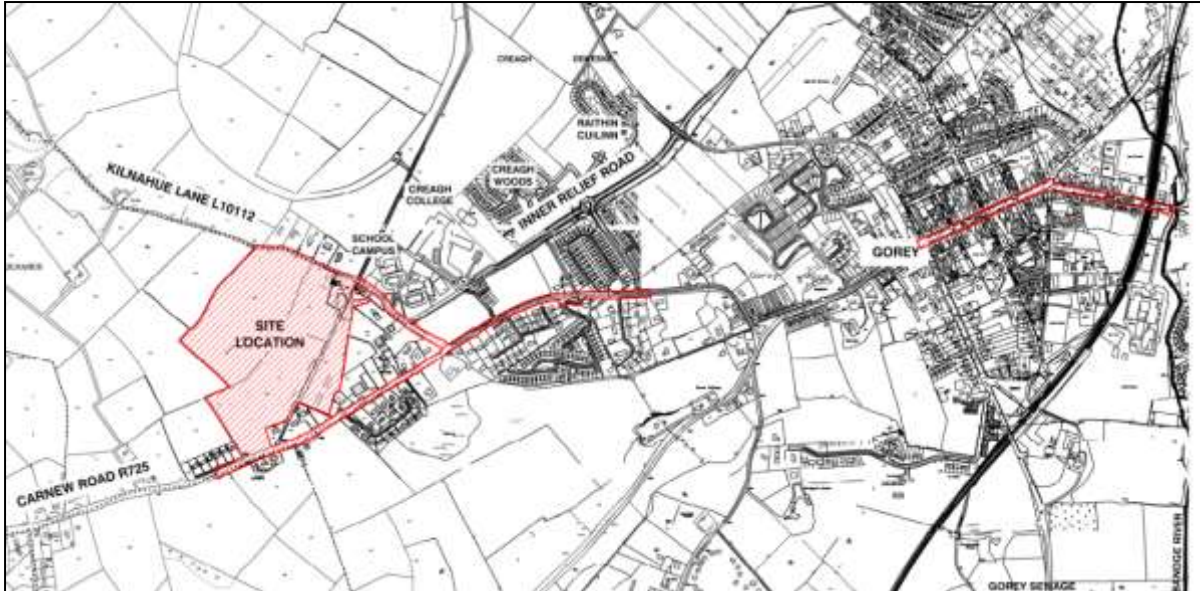


Figure 14-1. Site Location Map

14.3.2 Ownership and Access

The lands subject to the application is within the ownership of the applicant, Gerard Gannon Properties, with the exception of the public roads, which are under the control of Wexford County Council, with the necessary letter of consent obtained regarding the off-site works.

The subject site is bounded by two roads, the R725 Carnew Road to the south and the Kilnahue Lane (L10112) to the northeast. Vehicular access is proposed via both roads.

A Traffic and Transport Assessment has been prepared by Waterman Moylan Consulting Engineers and is submitted as part of the application for the proposed Project while the Transportation chapter of this EIAR also deals with this.

14.4 Electricity and Telecommunications

14.4.1 Electricity

ESB Networks have been contacted and an existing ESB network map for the area surrounding the proposed development has been obtained, refer to Appendix 14.1. There are existing ESB Networks (ESBN) infrastructure within the site. There are no records for below ground services in the vicinity of the site.

The existing overhead services on the site will be undergrounded and the existing below ground services will be diverted, if in place, as required. A new Medium Voltage below ground network will be provided in the proposed development which will connect to the existing ESB Networks infrastructure in the area. New “unit sub-stations” will be provided throughout the site to meet the

electrical demands associated with the new houses, apartments, duplex units, creche and community centre/retail.

The exact extent and location of the connections will be agreed upon with ESB Networks during the design stage of the project.

14.4.2 Telecommunications

Eir and Virgin Media have been contacted and the existing network maps for the area surrounding the proposed development have been obtained, refer to Appendix 14.2.

There are Eir Networks in the roads bounding the site, both on Kilnahue Lane and Carnew Road.

There are also existing Virgin Media services in the residential schemes to the east of the Kilnahue Lane Junction, and connection to these from the proposed development would be necessary to serve the development.

There are no existing services with the footprint of the proposed site.

New connections will be made to the existing Eir and Virgin Media networks at the boundary of the site and services will be distributed throughout the site as required. The exact extent and location of these connections will be agreed upon with Eir and Virgin Media during the design stage of the project

14.5 Waste Management

The principles and objectives to deliver sustainable waste management for this project have been incorporated in the preparation of this report and are based on the following strategic objectives:

- National Policy: The Waste Management Acts 1996 to 2005
- Local Policy: Waste Management Plan for the Dublin Region 2005 – 2010, November 2005.

This Waste Management Plan is also in accordance with the following guidance note published by the Department of the Environment, Heritage and Local Government in July 2006:

- Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition (C&D) Projects.

The hierarchy of waste management sets out the guiding principles in order of importance as follows:

1. Reduction of the amount of waste generated by the construction process.
2. Segregation of waste is a key concept that will be implemented during the course of the construction phase of the development to enable ease in re-use and recycling, wherever appropriate.
3. Recycle waste material where feasible, including the use of excess excavations as fill material, recycling of various waste fractions such as metals and packaging etc.

14.5.1 Typical Construction Waste

Typical construction waste which will be generated by the development is as follows:

- General site clearance waste including tree stumps etc.

- Some of the excavated material may require to be disposed of in a licensed landfill, if elevated levels of contamination are identified in the site investigation.
- Surface water runoff.
- Packaging and waste construction materials generated during the course of the construction activities.

14.5.2 On-Site Construction Waste Management

It is estimated that all cut and fill operations and any other excavation will be balanced in terms of quantities. Therefore, it is envisaged that no significant amounts of excavated materials shall be disposed of off-site. All waste masonry will be stored and crushed on site and used for site haul roads in later stages of the project. Skips will be provided for the disposal of wood from the site. It is envisaged that the majority of the wood for disposal will come from pallets used for the transport of construction materials. Other non-hazardous waste generated by the site (packaging and running of site offices) will be collected in separate roll-on skips. Any hazardous material encountered will be disposed of to a suitably licence tip. The Purchasing Manager shall ensure that materials are ordered so that the quantity delivered, the timing of the delivery and the storage is not conducive to the creation of unnecessary waste.

Table 14-1. Estimated C&D Waste Arisings on Site

C & D Waste Material	Quantity (tonnes)
Clay and Stones	Minimal quantities anticipated. All arisings will be used as fill and landscaping on the site.
Concrete	Arisings will be crushed and used as site haul roads (a concrete crushing permit will be required if crushing is to occur).
Masonry	All arisings will be crushed and used as site haul roads.
Wood	To be Completed by C&D Waste Manager
Packaging and Other Waste Materials	To be Completed by C&D Waste Manager
Hazardous Materials	To be Completed by C&D Waste Manager
Total Arisings Off Site	To be Completed by C&D Waste Manager

14.5.3 Off-Site Waste Management Licensing/Permitting

All waste materials (where necessary, after in-situ reuse and recycling options have been fully considered) shall be disposed of off-site, under the appropriate Duty of Care and subject to approvals/consents from the relevant statutory bodies. It is the responsibility of the Main Contractor to ensure that any company to whom waste is transferred is legally permitted to do so and that the facility they bring the waste to is licensed to handle that type of waste as outlined in the Waste Management Acts 1996-2005. The Waste Collection Permit Register, in accordance with the Waste Management (Collection Permit) Regulations 2001 will be consulted to ensure that waste carriers hold the appropriate permit.

The relevant waste collection permits and waste licences shall be provided by the Main Contractor and shall be appended to this report. An inspection of the site shall be made by the Main Contractor for hazardous substances, gas cylinders and the like. If such substances are encountered during the course of construction, then works must be halted. The project supervisor for construction stage (PSCS) and the responsible Statutory Authority shall be informed immediately.

The Main Contractor shall prepare a detailed inventory of construction based hazardous waste generated, such as tars, adhesives, sealants and other dangerous substances, and these will be kept segregated from other non-hazardous waste to prevent possible contamination. Arrangements shall be made for such substances for disposal in a safe manner to an authorized disposal site or by means acceptable to the relevant Authority. The Main Contractor will ensure that excavation works are carried out in accordance with best standard practice and excavation materials are well segregated to minimize any potential cross-contamination. The Main Contractor shall carry out appropriate environmental chemistry testing in order to determine the waste classification of the soils that are to be excavated and that shall include Waste Acceptance Criteria testing. The test regime shall be agreed with the receiving landfill operator and the testing shall be carried out by an accredited laboratory.

Site investigations carried out at the site, and included a waste classification report. All eight of the samples taken and tested were determined to be non-hazardous – refer to the Site Investigation Report included in Appendix 6.1. Although no hazardous waste was identified, it cannot be discounted that any localised contamination may have been missed. Should excavation materials be assessed to be hazardous, the Main Contractor shall carry out pre-treatment of the waste soils to a methodology that is agreed with the receiving landfill operator and in accordance with Environmental Protection Agency guidance.

The Main Contractor is encouraged to reuse and recycle any waste materials as far as is reasonably practicable. In respect of any liquid disposal including underground water, the Main Contractor shall carry out appropriate environmental chemistry testing in order to determine whether the liquid is contaminated or not. The test regime shall be agreed with the receiving disposal facility and the testing shall be carried out by an accredited laboratory. The Main Contractor shall manage and carry out the works in accordance with best environmental practice and in accordance with the requirements of Local Authority, EPA and all requirements as specified in this document.

14.5.4 Appointment of C & D Waste Manager

The Main Contractor shall appoint a C&D Waste Manager. The C&D Waste Manager will have overall responsibility for the implementation of the project Waste Management Plan (WMP) during the construction phase.

Copies of the Waste Management Plan will be made available to all relevant personnel on site. All site personnel and sub-contractors will be instructed about the objectives of the Waste Management Plan and informed of the responsibilities which fall upon them as a consequence of its provisions. Where source segregation, selective demolition and material reuse techniques apply, each member of staff will be given instructions on how to comply with the Waste Management Plan. Posters will be designed to reinforce the key messages within the Waste Management Plan and will be displayed prominently for the benefit of site staff.

14.5.5 C & D Record Keeping

It is the duty of the C&D Waste Manager to ensure that necessary licenses have been obtained as needed. Each consignment of C&D waste taken from the site will be subject to documentation which will conform with Table 4 along with Transportation Dockets to ensure full traceability of the material to its final destination.

Table 14-2. Details of materials taken from site

Details	Particulars
Project of Origin	Kilnahue, Gorey, Co. Wexford
Material being Transported	Soil, Construction waste
Quantity of Material	To be completed by C&D Waste Manager
Date of Material Movement	To be completed by C&D Waste Manager
Name of Carrier	To be completed by C&D Waste Manager
Destination of Material	To be completed by C&D Waste Manager
Proposed Use	To be completed by C&D Waste Manager

14.6 Potential Impacts

This section provides a description of the potential impacts of the proposed Project may have during the Construction and Operational phases. The impact assessment addresses the *direct, indirect, cumulative, short, medium and long term, permanent, temporary, positive and negative effects*.

Site Location and Context

The Construction phase will likely have a temporary impact on the existing settlement in the vicinity of the subject lands. There may also be some slight and temporary impacts to the existing population which may arise during the construction phase, refer to Chapter 4 (population and human health), Chapter 8 (air quality), Chapter 9 (noise and vibration) and Chapter 10 (climate) for further information.

The operational phase of the proposed Project will result in increased traffic volumes to the local road network. A Traffic and Transport Assessment has been prepared by Waterman Moylan Consulting Engineers and is submitted as part of the planning application for the proposed Project. Please refer to Chapter 12 (transport) for further information in this regard.

Ownership and Access

During the construction phase, access will be affected by hoarding and security fencing required onto the public road network. A detailed traffic management plan will be prepared and implemented by the Main Contractor and agreed with the Local Authority prior to commencing works. As a result, there will be a temporary disturbance to traffic in the surrounding area during construction.

The number of construction vehicle movements anticipated is low compared to the number of trips expected to be generated by the proposed development during the operational phase. It should be noted that the majority of such vehicle movements would be undertaken outside of the traditional peak hours, and it is not considered that this level of traffic would result in any operational problems.

Delivery trucks will be instructed to access the site via the adjoining road network. Flag men shall operate to ensure safe access and egress of HGV's. It is likely that construction will have a negligible impact on pedestrian and cycle infrastructure. It is proposed that a Construction Management Plan (CMP) would be prepared by the appointed contractor in order to minimise the potential impact of the construction phase of the proposed development on the safety and amenity of other users of the public road.

The proposal will also involve the provision of off-site upgrade works to existing engineering infrastructure on Kilnahue Lane, Carnew Road, Main Street and Esmonde Street, roads which are in the charge of Wexford County Council. This will involve a temporary dig of the roads and result in some traffic restrictions on a temporary basis. The impact of this would be temporary and slight.

14.7 Predicted Impacts

14.7.1 Electricity & Telecommunications

Construction Phase

The installation of the utilities for the development will be conducted in parallel with the other services. This will mainly involve excavation of trenches to lay ducting, construction/installation of access chambers and backfilling of trenching. The trenching and backfilling works will be carried out in conjunction with the construction of the roads and footpaths throughout the scheme.

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. Any loss of supply will be managed by ESB Networks to minimise the impact on neighbouring properties.

There is also a potential loss of connection to the Telecommunications infrastructure while carrying out works to provide service connections. Any loss of supply will be managed by Eir / Virgin Media to minimise the impact on neighbouring properties.

The construction of the proposed development has the potential to cause a **slight, adverse, temporary, residual impact** on receiving the electricity, gas and telecommunication networks.

Operational Phase

The impact of the operational phase of the proposed development on the power supply network would be the requirement for an Electrical Diversified Load to be split over up to ESB sub-stations located throughout the scheme.

The impact of the operational phase of the proposed development on the telecommunications network would be to increase the demand on the existing network.

The construction of the proposed development has the potential to cause a **slight, adverse, temporary, residual impact** on receiving the electricity, gas and telecommunication networks.

14.8 Mitigation Measures

14.8.1 Electricity

Construction Phase

Additional survey works will be carried out to confirm the location of existing services using service records, GPR surveys and slit trenches to ensure that their position is accurately identified before excavation works commence.

All works will be carried out in accordance with ESB Networks methods and standards

Live connections to the existing electricity network will only be made by ESB Networks

Operational Phase

It is not envisaged that any other remedial or reductive measures will be necessary upon the completion of the development.

14.8.2 Telecommunications

Construction Phase

Additional survey works will be carried out to confirm the location of existing services using service records, GPR surveys and slit trenches to ensure that their position is accurately identified before excavation works commence.

All works will be carried out in accordance with Eir & Virgin Media methods and standards.

Live connections to the existing electricity network will only be made by Eir & Virgin Media.

Operational Phase

It is not envisaged that any other remedial or reductive measures will be necessary upon the completion of the development.

14.8.3 Waste

Construction Phase

A Construction and Demolition Waste Management Plan (C&DWMP) has been prepared to deal with waste generation during the construction phase of the proposed Project and is included as part of the application packs. This document was prepared in accordance with best practice guidelines. This document must be implemented during the construction works.

Operational Phase

Operational waste management must be managed by a designated management company on site and the appointed licenced waste contractor which will ensure the sustainable management of domestic and commercial waste arising from the development in accordance with legislative requirements and best practice standards. A site-specific Operational Waste Management Plan has been prepared by Enviroguide Consulting for the proposed Project and is included as part of the application packs.

14.9 Residual Impacts

14.9.1 Electricity

Construction Phase

Due to the proposed mitigation measures outlined above, the impact of the proposed work on the ESB Network will not be significant.

There may be short term disruption to local traffic or temporary interruptions to supply while the ties to the existing networks are being made.

Operational Phase

The impact of the operational phase of the proposed development on the power supply network would be the requirement for an Electrical Diversified Load split over up to ESB sub-stations located throughout the scheme.

14.9.2 Telecommunications

Construction Phase

Due to the proposed mitigation measures outlined above, the impact of the proposed work on the Telecommunication Network will not be significant.

There may be short term disruption to local traffic or temporary interruptions to supply while the tie-ins to the existing networks are being made.

Operational Phase

The impact of the operational phase of the proposed development on the telecommunications network would be to increase the demand on the existing network.

14.10 Cumulative Impacts

14.10.1 Electricity

Should any other developments be under construction or planned in the vicinity of the site they are likely to have similar impacts during the construction phase in relation to Material Assets. Should the construction phase of any developments coincide with the development of this proposed site, potential cumulative impacts are not anticipated once similar mitigation measures are implemented.

14.10.2 Telecommunications

Should any other developments be under construction or planned in the vicinity of the site they are likely to have similar impacts during the construction phase in relation to Material Assets. Should the construction phase of any developments coincide with the development of this proposed site, potential cumulative impacts are not anticipated once similar mitigation measures are implemented.

14.10.3 Waste

Should any other developments be under construction or planned in the vicinity of the site they are likely to have similar impacts during the construction phase in relation to Material Assets. Should the construction phase of any developments coincide with the development of this proposed site, potential cumulative impacts are not anticipated once similar mitigation measures are implemented.

14.11 Monitoring

The proposed monitoring of the various built services during the operation stage will include:

- The construction and waste management plans will be adhered to.

- The provision of utility services including electricity, gas and broadband will be monitored by the relevant utility providers.

14.12 Reinstatement

No reinstatement will be required. Residual impacts on services and utilities are considered to be imperceptible.

14.13 'Do-Nothing' Scenario

A 'do-nothing' scenario is not considered valid as the lands are currently zoned for development under the Wexford County Development Plan. However, if a do-nothing scenario were to occur, the lands would not be developed and therefore would be no adverse impacts to material assets. In the event that the proposed Project does not proceed, the lands would remain in its current condition in the short-term or until alternative development proposals are granted planning permission.

14.14 Difficulties Encountered

The exact location of existing service infrastructure is reliant upon the records obtained, where relevant. There were no difficulties encountered.

14.15 Interactions

The main high-level interactions between Material Assets - Utilities and Waste with other environmental factors include: Water, Air quality, Population & Human Health and Traffic & Transport. Please refer to the relevant chapter, Chapter 15 Interactions, for further information on interactions.

14.16 References

- Openeir Emaps
- Environmental Impact Assessment Reports – Draft Guidelines, (2017), Environmental Protection Agency
- ESB Networks and Virgin Media Emaps
- Waterman Moylan Consulting Engineers drawings and documentation submitted as part of the planning applications.
- Environmental Protection Agency (EPA), Guidelines on the information to be contained in Environmental Impact Statements (March 2002).
- EPA, Advice Notes on Current Practice (in the preparation of Environmental Impact Statements) (September 2003).
- EPA, Advice notes for preparing Environmental Impact Statements (September 2015).
- EPA, Guidelines on the Information to be contained in Environmental Impact Assessment Reports (August 2017).
- Circular Letter PI 1/2017: Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive).
- The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018).
- Waste Management Acts 1996 -2001 and associated Regulations.
- Protection of the Environment Act 2003 (as amended).
- Litter Pollution Act 1997.

- Wexford County Council Bye-Laws.
- Waste Management: Changing Our Ways (1998).
- Preventing and Recycling Waste: Delivering Change (2002).
- Taking Stock & Moving Forward (2004).
- National Strategy on Biodegradable Waste Management (2006).
- A Resource Opportunity Waste Management Policy in Ireland (2012).

15.0 INTERACTIONS

15.1 Introduction

The matrix incorporated in Table 15.1 below, inter-relates Chapters 3.0 to 14.0 of the Environmental Impact Assessment Report to the various impacts referred to in the relevant Environmental Impact Assessment Regulations.

15.2 Interactions

Listed below are the interactions:

No.	Heading	Population and Human Health	Biodiversity	Land, Soils & Geology	Water	Air Quality	Noise & Vibration	Climate	Landscape & Visual Impact	Transportation	Cultural Heritage	Material Assets – Utilities & Waste
4	Population and Human Health		✓				✓	✓	✓	✓	✓	✓
5	Biodiversity	✓			✓	✓	✓	✓	✓	✓		
6	Land and Soils	✓	✓		✓			✓	✓			✓
7	Water		✓	✓					✓			✓
8	Air Quality	✓		✓						✓		
9	Noise & Vibration	✓	✓							✓		
10	Climate	✓										
11	Landscape	✓	✓	✓		✓		✓				
12	Material Assets – Traffic and Transport	✓				✓	✓	✓				✓
13	Cultural Heritage								✓			
14	Material Assets – Utilities & Waste	✓			✓					✓		

Table 15.1 Interactions Identified in the EIAR

The following sub-sections seek provide an overview of the interactions identified within the EIAR chapters. Such interactions include the following:

15.2.1 Population and Human Health/Population and Human Health

The population and human health content of this application will impact on the existing environment in terms of the provision of new housing and recreational facilities and limited employment with an associated requirement generated directly by the development for services, commercial and recreational facilities and employment.

Chapter 4 of this EIAR found that the impact on human beings as a result of the development will be positive or neutral in the general area of the proposed development. The scheme will provide a high-quality residential development required for the Gorey area in order to meet demand deriving from

predicted population increases, on zoned lands which are serviced and accessible to public transport links. The overall interaction will be a positive contribution to the critical mass needed to maintain and further expand typical urban facilities both in town centre as well as the proposed ancillary uses on the site.

15.2.2 Population and Human Health/Biodiversity

While catering for a predicted increase in population, the proposed development will contribute to a population increase, which may place additional pressure on the natural environment in terms of disturbance and loss of habitat during the operational and construction phases of the development.

Chapter 5.0 of the EIAR addresses the potential impact the proposed development would have on the habitats pertaining to the subject lands, however no significant impacts are likely to arise. Furthermore, impacts to protected areas are not predicted to occur, principally due to the separation distance between the site and these areas.

There are a number of mitigation measures required in order to ensure that pollution does not occur during the construction phase, or that negative effects do not occur to bats or birds' nests. With the suggested mitigation in place, no significant negative effects are likely to arise.

15.2.3 Population and Human Health/Land and Soils

The EIAR has found that provided appropriate protective measures are taken whilst construction and excavation works are ongoing and during transport of soil and spoil, any potential impacts on soils and geology in the area will be temporary and limited in extent, and as such no significant adverse impacts on the soils and geology of the subject lands are envisaged.

There is potential for dust generation during construction works which under dry conditions could lead to localised dust impacts for the properties proximate to the subject site. However, the implementation of the planned mitigation measures on site management controls will ensure that no significant adverse impacts will accrue for adjoining local residents.

15.2.4 Population and Human Health/Air Quality & Climate

Dust emissions may arise during the construction phase. In order to ensure that any dust nuisance is minimised, a series of mitigation measures have been set out in Chapter 8.0 and 10.0. If the construction contractor adheres to good working practices and dust mitigation measures, the levels of dust generated are assessed to be minimal and are unlikely to cause an environmental nuisance.

The main potential air quality impacts from the operational phase of the development relate to the impact from increase in traffic associated with the use of the buildings. The potential impacts on the local air quality are considered to be long-term and slight. The mitigation measures set out within the scheme include promoting the use of the public transport network, provision of extensive cycle facilities and the availability of electric car charging points. The emissions of pollutants from road traffic can be controlled by either controlling the number of road users or by controlling the flow of traffic. In this regard, a mobility management strategy will be implemented to promote a modal shift to more sustainable forms of transport and electric vehicles. Emissions arising as a result of any traffic associated with the proposed development is unlikely to impact on air quality standards.

15.2.5 Population and Human Health/Noise and Vibration

There will be some localised temporary adverse impacts in relation to noise during the construction phases of the development. However, these will be localised, intermittent and of limited duration and can be mitigated through the use of appropriate noise control procedures. The implementation of these procedures will reduce noise impacts on the surrounding area.

The main potential noise source that would be evident during the operational phase of the development would be that of increased road traffic noise associated with the site. Specifically, sources would be likely to include but not be limited to the following: vehicular traffic into and out of the estate by residents, and general residential activities. The EIAR has found that the cumulative impact of noise arising from onsite noise sources and road traffic noise associated with the site will not give rise to a noticeable change on the noise climate at this location.

15.2.6 Population and Human Health/Landscape and Visual Amenity

The proposed development has been designed to address the integration of existing buildings, proposed architecture, access, infrastructure and context. The planting plan for the proposed mix-use development utilises a palette of naturalised native and ornamental species which are chosen for their visual qualities, ease of establishment and their capacity to provide habitats. The principal mitigation measures involve mitigation by avoidance in the design and layout of the scheme. A comprehensive and cohesive landscape treatment has been proposed to ensure an overall quality external scheme shall be delivered.

It is considered that the general disturbance and the initial change associated with the scheme eases as the new development establishes its own presence and characteristic influence on its environs. The provision of significant quantities of public and private open space within the proposed development will be of benefit to future residents and existing residents of the wider area. Therefore, the significance of the landscape and visual impact of the proposed development will be positive as the landscape and environs matures over time.

15.2.7 Population and Human Health/Material Assets – Utilities & Waste

The proposed development and new population will result in an increase demand on utilities, such as energy and telecommunications as well as generation of waste. The impact to services and utilities are considered to be positive and permanent positive to all end users in light of the mitigation measures outlined in the EIAR and Construction and Demolition Waste Management Plan.

15.2.8 Population and Human Health/Transportation

The proposed development provides for pedestrian and cycle routes as well as the provision of new roads and upgrades to the adjoining road network, which will result in a positive interaction between Population and Human Health and Transportation, as the development will facilitate the use of sustainable forms of transportation (i.e. walking & cycling).

A Travel Plan is included as part of the proposal in order to reduce in overall terms both the number of trips generated by a particular development, and to ensure that greater numbers use public

transport. A travel plan will be implemented with the objective of developing a sustainable transportation and access policy for residents and users of the proposed development both during and after the construction.

The optimal approach adopted in developing the transport infrastructure for the proposed SHD is as follows: *Reduce the need to travel, Reduce the distance travelled, Reduce time spent travelling, Promote sustainable walking and cycling, and Promote access to Public transport.*

In conjunction with the upgrades to the wider local road network outside the immediate development area proposed, the surrounding junctions have been assessed and this concluded that there will be enough capacity to cater for the entire development. The impact of the increased traffic volumes that will be generated in the area following the construction of the development is not expected to lead to significant congestion as the road network will have sufficient capacity to cater for the proposed development.

15.2.9 Biodiversity/Land and Soils

Movement of soils during the construction phase of the proposed development may result in temporary disruption to fauna. In terms of flora, topsoil removed during the construction phases will be re-spread where possible providing optimal growing conditions for planting, preventing soil erosion. Mitigation measures are set out in Chapter 5.0 of the EIAR to avoid impacts on biodiversity.

15.2.10 Biodiversity/Water

All foul drains will be tested and surveyed prior to connection to the public sewers to minimise the risk of uncontrolled ground water penetration of foul water leakage to ground water on the site. In addition, the drainage scheme proposed is based on Sustainable Urban Drainage Systems (SUDS) to improve the water quality of the surface water runoff ensuring that there is no impact on aquatic flora and fauna. Good site management practices will also ensure that pollution to existing watercourses does not occur during the construction and operation phases.

15.2.11 Biodiversity/Landscape and Visual Amenity

The removal of trees and hedgerows may have a negative impact on fauna, such as birds and bats, but all tree removal should only be carried out during the appropriate season and under the supervision of an ecologist/bat specialist to ensure that no protected species are affected. Mitigation measures will ensure that significant negative effects on biodiversity do not occur.

15.2.12 Biodiversity/Noise and Vibration

The construction phase of the development is anticipated to give rise to temporary, intermittent increases in daytime noise levels which may give rise to temporary disruption to fauna. However, impacts are not predicted to be significant in this regard and will be minimised through appropriate mitigation measures, which are outlined in this EIAR.

15.2.13 Land and Soils/Water

Ground clearance works may give rise to accidental spillage/contamination of local watercourses. The removal of topsoil during earthworks and the construction of roads, services and buildings will expose

subsoil to weathering and may result in the erosion of soils, particularly during adverse weather conditions. Storm water runoff from the surface of the excavated areas may result in silt discharges to local streams. Accidental oil or diesel spillages from construction plant and equipment, in particular at refuelling areas, may result in oil contamination of the soils and underlying geological structures. However, appropriate mitigation measures are specified in order to minimise and prevent the accidental release of hazardous material to soil and waters. Thus, no significant adverse impacts are envisaged.

15.2.14 Land and Soils/Landscape and Visual Amenity

Topsoil removed during the construction phase will be re-used in landscaping works for proposed open space and other landscaped areas, rather than being transported for disposal off site. Although this will have an impact, it will be mitigated by means of appropriate landscaping features. This is also outlined in the Construction and Demolition Waste Management Plan submitted by Waterman Moylan Consulting Engineers as part of the planning application.

15.2.15 Air Quality & Climate/Biodiversity

The development will have no effect on climatic conditions that would be sufficient to affect animal populations on or in the vicinity of the site.

15.2.16 Air Quality & Climate/Transportation

Emissions from motor vehicles accessing the proposed development and using the proposed new roads within the development are not anticipated to have a significant adverse impact on air quality in the area.

Traffic-related air emissions during the operation phase may generate higher quantities of air pollutants when compared to the existing traffic volumes. A Travel Plan has been prepared and will be implemented to promote a modal shift to more sustainable forms of transport. Air emissions arising as a result of any traffic associated with the proposed development is unlikely to impact on air quality standards, however, due to the size and scale of the site, the impacts of the operational phase of the development on climate are considered to be long term and equates to an imperceptible impact in relation to climate and air quality as a result of operational traffic. It is noted that the move towards more sustainable electric vehicles and non-car-based transport modes will over time reduce emissions associated with travel.

15.2.17 Noise and Vibration/Transportation

Temporary minor increases in noise may be generated as a result of construction traffic. A Traffic Management Plan will be implemented to minimise disruption arising as a result of traffic generated during the construction phase.

15.2.18 Transportation/Biodiversity

While traffic associated with the construction and operation stages may disrupt fauna, impacts are unlikely to be significant.

15.2.19 Material Assets – Utilities & Waste/Water

There is potential for some temporary impacts on water from the waste generated by the construction phase of the development. However, this can be mitigated by the implementation of the Construction & Demolition Waste Management Plan, which has been prepared by Waterman Moylan Consulting Engineers.

15.2.20 Transport/Material Assets – Utilities & Waste

There is potential for some temporary impacts on traffic in the area and the road network from the utilities installation required by the construction phase of the development. However, this can be mitigated by the implementation of the Construction Management Plan, which has been prepared by Waterman Moylan Consulting Engineers.

15.3 Summary

The EIAR has identified potential for interactions between a range of factors identified in Table 15.1. These interactions require the implementation of suitable mitigation measures to ameliorate the impact of the development on the environment. This EIAR has found that subject to the full implementation of the various mitigation measures specified by the EIAR team and summarised in Chapter 16, the development will have no significant negative impact on the environment.

16.0 SUMMARY OF MITIGATION & MONITORING MEASURES

16.1 Introduction

The list incorporated in Table 16.1 below, contains the mitigation and monitoring measures proposed to ensure no significant residual, significant effects arise from the proposed development, which have been set out in Chapters 5.0 to 14.0 of the Environmental Impact Assessment Report to the various impacts referred to in the relevant Environmental Impact Assessment Regulations.

16.2 Mitigation & Monitoring Measures

Listed below are the mitigation and monitoring measures proposed for the proposed development:

Chapter	Mitigation & Monitoring Measures Proposed
Biodiversity	<p><u>Mitigation Measures Proposed:</u></p> <p><u>Mitigation 1:</u> Loss of habitat – mitigation by compensation Landscaping of the development has been designed to compensate for the loss of habitat arising from the removal of higher and lower significance hedgerows and earth banks. In total, 400m² of scrub, 790m of ‘lower significance’ earth bank/hedgerow and 1,043m of ‘higher significance’ hedgerow are to be removed. If it is assumed (conservatively) that the average width of linear habitat is 5m, then the total area of habitat to be lost is c.10,000m². The landscape design includes c.12,957m² of new native woodland, 3,242m² of new wildflower meadows and 4,617m² of pocket parks. This include enhancement planting of earth banks and lower significance hedgerows to be retained (increasing their area as well as additional native planting). Meadow areas will be managed by cutting twice a year, once early in the season and again after flowers have seeded in the autumn. No herbicide sprays are to be used. These areas are shown in figure 5. This gives a total of 20,8816m² of new habitat, or over twice the area of higher and lower significance habitat to be removed. Habitat compensation is not a precise science and new planting cannot fully compensate for the loss of old, biodiverse hedgerows. New planting will take time to achieve its biodiversity potential and will rely upon appropriate management during the operational phase. Nevertheless, the extent of compensation areas will reduce the magnitude of the negative effect arising from habitat loss so that in the medium to long-term the impact will not be significant. Additional habitat enhancement measures include the installation of Swift nesting boxes and bat boxes.</p> <p><u>Mitigation 2:</u> Disturbance of birds’ nests – mitigation by avoidance All birds’ nests, eggs and young are protected by law. Trees and other vegetation should ideally be felled outside the nesting season (September to February). Where this is not possible, trees should be first inspected for nests. If no nest is present felling can proceed. If a nest is present then works can only proceed under licence from the National Parks and Wildlife Service.</p> <p><u>Mitigation 3:</u> Disturbance to bats – mitigation by avoidance The following is taken from the bat and badger survey report: <i>Examination of all buildings prior to demolition</i></p>

All buildings (the cottage, sheds, and other buildings) shall be examined by a bat specialist for the presence of bats prior to and during demolition. If bats are discovered, the structure is protected under the Wildlife Act as a bat roost and a derogation must be sought from NPWS for the exclusion of bats by a bat specialist and any additional required mitigation.

Checking of trees for bats

Following a tree assessment of the site, any trees with cavities shall be checked by a bat specialist prior to felling. If bats are present, a derogation shall be sought from NPWS and additional measures to mitigate the loss of a roost shall be implemented.

Examination of all lands for badgers prior to major clearance operations

The site shall be examined prior to clearance for the presence of badger setts.

Mitigation 4: Prevention of pollution – mitigation by avoidance

Construction will follow guidance from Inland Fisheries Ireland on the prevention of pollution during construction projects (2016). This will include the storage of dangerous substances in bunded areas and ensuring the silt-laden water does not run-off the site. Water will only be permitted to leave the site after passing through suitably-sized silt-traps. Pollution prevention measures will be maintained for the full duration of the construction project. The site manager will be responsible for the prevention of pollution. The following specific measures are included in the Preliminary Construction, Demolition and Waste Management Plan prepared for this planning application by Waterman Moylan. This includes the following specific pollution prevention measures:

- **Straw Bales:** Straw bales can be placed at the base of a slope to act as a sediment barrier. These are not recommended for use within a swale or channel. Straw bales are temporary in nature and may perform for only a period of weeks or months. Proper installation and maintenance is necessary to ensure their performance.
- **Silt Fencing:** A silt fence is made of a woven synthetic material, geotextile, and acts to filter run-off. Silt fencing can be placed as a temporary barrier along the contour at the base of a disturbed area, but is not recommended for use in a channel or swale. The material is durable and will last for more than one season if properly installed and maintained. Silt fencing is not intended to be used as a perimeter fence or in area of concentrated flow. If concentrated flow conditions exist, a more robust filter should be considered.
- **Silt Barriers:** Silt barriers can also be temporarily installed in any road gullies of partially constructed roads to prevent sediment movement into downstream drainage systems or SUDS components. When the catchment area is greater than that allowed for straw bale barriers or silt fences, runoff should be collected in diversion drains and routed through temporary sediment basins.

	<ul style="list-style-type: none"> • Diversion Drains: Diversion drains are simple linear ditches, often with an earth bund, for channelling water to a desired location. If the drains are being eroded they can be lined with geotextile fabric or large stones or boulders. <p>Mitigation 5: Artificial lighting – mitigation by minimisation</p> <p>The bat survey recommends that:</p> <p><i>Lighting around the buildings shall be tightly controlled and ornamental lighting shall be avoided entirely. Lighting should respond to a motion trigger or be switched off at night after typical active hours (e.g., 11 pm to 6 am). Spotlights must not be introduced as these are hugely disruptive to most wildlife and cannot be targeted to the required area but create light pollution over a huge radius.</i></p> <p><i>Further recommendations on lighting are given below:</i></p> <ul style="list-style-type: none"> • <i>Dark corridor for movement of bats through the site. Lighting shall be directed downwards away from the treetops.</i> • <i>All luminaires shall lack UV elements when manufactured and shall be LED</i> • <i>A warm white spectrum (ideally <2700 Kelvin) shall be adopted to reduce blue light component</i> • <i>Luminaires shall feature peak wavelengths higher than 550 nm</i> • <i>Planting shall provide areas of darkness suitable for bats and badgers to feed and commute through the site.</i> <p>Additional mitigation measures proposed in the bat report around planting and the preservation of feeding resources have been accounted for in the mitigation measures for habitat loss already discussed.</p> <p><u>Monitoring Proposed:</u></p> <p>Monitoring is required where the potential impact of mitigation is uncertain or where significant residual impacts may arise despite mitigation. In this case no residual significant negative effects to biodiversity are predicted. Nevertheless, monitoring of pollution prevention measures will be required throughout the construction phase.</p>
<p>Land and Soils</p>	<p><u>Mitigation Measures Proposed:</u></p> <p>Construction Stage</p> <p>To reduce the quantity of soil to be removed from or imported into the site, the floor levels of the proposed buildings and roads are designed to match existing levels as closely as is feasible, to minimise the cut and fill balance. The number of vehicle movements offsite will be minimised by this optimisation.</p> <p>Surplus subsoil and rock that may be required to be removed from site will be deposited in approved fill areas or to an approved waste disposal facility. Surplus subsoil will be stockpiled on site, in such a manner as to avoid contamination with builders’ waste materials, etc., and so as to preserve the materials for future use as clean fill. A Construction Management Plan will need to include protocols for soil removal and should be implemented by the development’s main contractor during the construction stage.</p>

Soil samples taken from the site during the site investigations showed no evidence of contamination. However, any contaminated soils that are encountered during the works will be excavated and disposed of off-site in accordance with the Waste Management Acts, 1998-2006, and associated regulations and guidance provided in Guidelines for the Management of Waste from National Road Construction Projects published by the National Roads Authority in 2008.

In the case of topsoil, careful planning and on-site storage can ensure that this resource is reused on-site as much as possible. Any surplus of soil not reused on site can be sold. However, topsoil is quite sensitive and can be rendered useless if not stored and cared for properly. It is therefore important that topsoil is kept completely separate from all other construction waste, as any cross-contamination of the topsoil can render it useless for reuse.

It is important to ensure that topsoil is protected from all kinds of vehicle damage and kept away from site-track, delivery vehicle turning areas and site plant and vehicle storage areas.

If topsoil is stored in piles of greater than two metres in height, the soil matrix (internal structure) can be damaged beyond repair. It should also be kept as dry as possible and used as soon as possible to reduce any deterioration through lengthy storage and excess moving around the site.

Records of topsoil storage, movements and transfer from site will be kept by the C&D Waste Manager.

The provision of wheel wash facilities at the construction entrances to the development will minimise the amount of soils deposited on the surrounding road network. The adjoining road network will be cleaned on a regular basis, as required, to prevent the build-up of soils from the development site on the existing public roads. Dampening down measures with water sprays will be implemented during periods of dry weather to reduce dust levels arising from the development works.

Measures will be implemented throughout the construction stage to prevent contamination of the soil and adjacent watercourses from oil and petrol leakages. Suitable bunded areas will be installed for oil and petrol storage tanks. Designated fuel filling points will be put in place with appropriate oil and petrol interceptors to provide protection from accidental spills. Refuelling will be restricted to these allocated re-fuelling areas. This area is to be an impermeable bunded area designed to contain 110% of the volume of fuel stored.

During excavation works, temporary sumps will be used to collect any surface water run-off thereby avoiding of standing water within the excavations. If groundwater is encountered during excavations, mechanical pumps will be required to remove the groundwater from sumps. Sumps should be carefully located and constructed to ensure that groundwater is efficiently removed from excavations and trenches.

Silt traps, silt fences and tailing ponds will need to be provided by the contractor where necessary to prevent silts and soils being washed away by heavy rains during the course of the construction stage. Surface water runoff and water pumped from the excavation works will be discharged via a silt trap / settlement pond to the

	<p>existing foul drainage network. Straw bales will be used at the outfall to filter surface water to remove contaminants.</p> <p>Appropriate storage and bunding measures will be implemented throughout the construction stage to prevent contamination of the soil and groundwater from oil and petrol leakage from site plant. Refuelling will be restricted to allocated re-fuelling areas. This area is to be an impermeable bunded area designed to contain 110% of the volume of fuel stored.</p> <p>After implementation of the above measures, the proposed development will not give rise to any significant long term adverse impact. Moderate negative impacts during the construction stage will be short term only in duration.</p> <p>A Construction Management Plan, Traffic Management Plan and Waste Management Plan will be implemented by the contractor during the construction stage to control the above remedial measures.</p> <p>by the contractor during the construction stage to control the above remedial measures.</p> <p>Operational Stage</p> <p>On completion of the construction phase and following replacement of topsoil, a planting programme will commence to prevent soil erosion. SuDS and filtration devices are proposed to be provided as part of the development. These will help to remove pollutants from rainwater runoff. The SuDS proposals will also encourage infiltration of surface water to the ground.</p> <p><u>Monitoring Proposed:</u></p> <p>Construction Stage</p> <p>Monitoring during the construction phase is recommended, in particular in relation to the following:</p> <ul style="list-style-type: none">• Adequate protection of topsoil stockpiled for reuse.• Adequate protection from contamination of soils for removal.• Monitoring of surface water discharging to existing watercourses, ditches and the existing surface water drainage system.• Monitoring cleanliness of the adjoining road network.• Monitoring measures for prevention of oil and petrol spillages.• Dust control by dampening down measures close to the boundaries of the site, when required due to unusually dry weather conditions. <p>Operational Stage</p> <p>During the operational phase, the surface water network (drains, gullies, manholes, AJs, SuDS devices, attenuation system) will need to be regularly maintained and where required cleaned out. A suitable maintenance regime of inspecting and</p>
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	<p>cleaning should be incorporated into the safety file/maintenance manual for the development.</p>
<p>Water</p>	<p><u>Mitigation Measures Proposed:</u></p> <p><u>Water Supply</u></p> <p><i>Construction Stage:</i></p> <p>A method statement setting out in detail the procedures to be used when working in the vicinity of existing watermains will be produced by the contractor for any construction works within the vicinity of watermains and for roads or services crossing watermains.</p> <p>All watermains will be cleaned and tested in accordance with Irish Water guidelines prior to connection to the public watermain. All connections to the public watermain will be carried out by, or under the supervision of, Irish Water.</p> <p>Potential negative impacts during construction stage will be short term only.</p> <p><i>Operational Stage:</i></p> <p>Water meters will be installed at connection points, with locations to be agreed and approved by Irish Water, and these meters will be linked to Irish Water’s monitoring system by telemetry. These meters will facilitate the early detection of unusual water usage in the network and identify potential leaks in the system.</p> <p>All plumbing fixtures and fittings and sanitary wear to be installed within the development should be to the current best practice for water consumption to minimise future water usage.</p> <p>It is not envisaged that any further remedial or reductive measures will be necessary on completion.</p> <p><u>Foul Water Drainage</u></p> <p><i>Construction Stage:</i></p> <p>In order to reduce the risk of defective or leaking foul sewers, the following remedial measures will be implemented: -</p> <ul style="list-style-type: none"> • All new foul sewers will be tested by means of an approved air test during the construction stage in accordance with Irish Waters Code of Practice and Standard Details. • All private drainage will be inspected and signed off by the design Engineer in accordance with the Building Regulations Part H and BCAR requirements. • Foul sewers will be surveyed by CCTV to identify possible physical defects. • The connection of the new foul sewers to the public sewer will be carried out under the supervision of Irish Water and will be checked prior to commissioning. • Prior to commencement of excavations in public areas, all utilities and public services will be identified and checked, to ensure that adequate protection measures are implemented during the construction stage.

<p><i>Operational Stage:</i></p> <p>All foul drains will be tested and surveyed prior to connection to the public sewers to minimise the risk of uncontrolled ground water penetration or leakage of the foul water to ground water on the site.</p> <p>Otherwise, no remedial or reductive measures are deemed to be necessary after completion of the proposed development, other than normal maintenance of the foul sewer system.</p> <p><u>Surface Water Drainage</u></p> <p><i>Construction Stage:</i></p> <p>The contractor will prepare and implement a Construction Management Plan which will outline the requirements for the storage and handling of fuel, including the refuelling of vehicles in designated refuelling zones to minimise the risk of spillages, and the impact of spillages should they occur.</p> <p>The Construction Management Plan will also utilise sedimentation controls, including silt traps, tailings ponds and silt fences during the construction period.</p> <p>All private drainage will be inspected and signed off by the design Engineer in accordance with the Building Regulations Part H and Building Control (Amendment) Regulations (BCAR) requirements. This will reduce the possibility of any cross connections being constructed.</p> <p><i>Operational Stage:</i></p> <p>The proposed flow control device is to be limited to the greenfield equivalent runoff rate. The net runoff volume from the site will therefore remain unchanged. There is a possibility of some foul water ingress into the surface water drainage system due to poor workmanship. Any such cross connections could result in pollution of the surface water network.</p> <p>Surface water will be attenuated privately and will discharge to the public network at a controlled rate limited to the greenfield equivalent runoff rate.</p> <p>In addition, the SuDS devices outlined in Section 8.4.4 will reduce and slow down the rate of surface water runoff from the site. This will minimise peak flows in the downstream system during major storm events. Gullies and the flow control devices shall be regularly maintained to avoid blockages.</p> <p>The SuDS treatment train will also treat the surface water discharging to the public network, removing pollutants from the surface water runoff. Maintenance of these SuDS devices will be required to ensure that they continue to treat the surface water as designed.</p> <p><u>Monitoring Proposed:</u></p> <p>Water Supply</p>
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	<p>Water usage and potential leakage will be monitored by Irish Water using the water meters which will be installed on the supply pipes so that the development can be monitored in sections. The location of these meters will be agreed with Irish Water and the meters will be linked to Irish Water’s monitoring system via telemetry.</p> <p>Foul Water Drainage</p> <p>Following completion of construction of the development there are no monitoring requirements envisaged other than normal monitoring and maintenance of the wastewater system by Irish Water.</p> <p>Surface Water Drainage</p> <p>The surface water network (drains, gullies, manholes, AJs, SuDS devices, attenuation system) will need to be regularly maintained and where required cleaned out. A suitable maintenance regime of inspecting and cleaning shall be incorporated into the safety file/maintenance manual for the development.</p>
<p>Air Quality</p>	<p><u>Mitigation Measures Proposed:</u></p> <p>Remedial and Reductive Measures</p> <p><i>Construction Phase</i></p> <p>For all site activity the aim should be to prevent effects on receptors through the use of effective and practical mitigation. Full details of the dust management plan can be found in Appendix 8.1. At all times, the procedures within the plan will be monitored and assessed. Summary of mitigation measures include:</p> <ul style="list-style-type: none"> ▪ Any site roads with the potential to give rise to dust will be regularly watered, as appropriate during dry and/or windy conditions. ▪ Hard surface roads will be swept to remove mud/aggregate materials from surface. ▪ Wheel washing system in place to dislodge accumulated dust and mud. ▪ Any unsurfaced roads will be restricted to essential site traffic only. ▪ Avoid unnecessary vehicle movements and limit speeds on site so as to minimise the generation of airborne dust, 10-15 km/h is suggested. ▪ All plant machinery not in operation will be turned off and idling engines shall not be permitted for excessive periods. ▪ All vehicles which present a risk of spillage of materials, while either delivering or removing materials will be loaded in such a way as to prevent spillage. ▪ Immediate clean-up of any spillages of dusty materials to minimise accumulations of loose dry goods. ▪ Location of temporary storage of dusty materials as far from the nearest sensitive receptors as practicable.

	<ul style="list-style-type: none"> ▪ Where drilling or pavement cutting, grinding or similar types of operations are taking place measures to control dust emissions will be used by the erection of barriers. ▪ Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. ▪ A complaints log shall be maintained by the appointed manager and in the event of a complaint relating to dust an investigation will be initiated. <p><i>Operational Phase</i></p> <p>As outlined in the DMRB assessment, it is deemed that the operational phase will not generate air emissions that would have a significant adverse impact on local ambient air quality. There are no mitigation measures specified for the operational phase. Also, the Travel Plan aims to promote sustainability by enhancing public transport with regular and ongoing increases in the public transport capacity, both road and rail and to reduce dependency on the use of the private car.</p> <p><u>Monitoring Proposed:</u></p> <p>If the construction contractor adheres to good working practices and the mitigation measures are in place, the levels of emission generated are assessed to be minimal and are unlikely to cause an impact on air quality. No monitoring is deemed necessary.</p>
<p>Noise & Vibration</p>	<p><u>Mitigation Measures Proposed:</u></p> <p>DKP_{EV} do not anticipate the requirement of any remedial measures but list the following recommendations mainly for the construction sites;</p> <ul style="list-style-type: none"> ▪ Ensure that the local authority guidelines or planning directives to noise levels and operational times are adhered too. ▪ Prepare a construction phase operational plan with regards to limiting noise nuisance. ▪ Ensure all construction vehicles and plant are regularly maintained including any noise control measures such as attenuators, filters etc. ▪ Limit any construction noise spreading to neighbouring site by erecting temporary noise barriers (site boundary hoarding). ▪ Schedule particular high-level noise activities for times when increased noise levels are less sensitive or notify neighbouring residents or any sensitive sites. <p><u>Monitoring Proposed:</u></p> <p>No noise monitoring is deemed necessary for the operational phase however noise monitoring will most likely be a requirement as directed by the local authority for the construction phase based on the local authorities imposed limits on the hours of operation and noise limits. No vibration monitoring is deemed necessary for both the operational and construction phase.</p>

<p>Climate</p>	<p><u>Mitigation Measures Proposed:</u></p> <p>There are no particular mitigation measures noted. All the recommended reduction measures at design stage and as applied in the CO2 reduction tables are for the greater part mandatory to comply to the relevant regulations and standards. As each development/building can only be certified for compliance under the Building Control Amendment Regulations (BCaR) if the minimum criteria set at design stage is met in full it is very unlikely that non-compliance i.e. mitigation occurs.</p>
<p>Landscape and Visual Impact</p>	<p><u>Mitigation Measures Proposed:</u></p> <p>Construction Phase</p> <p>During the construction of the development, the area shall be changed from agricultural use lands to a residential development with a crèche. The introduction of the built structures, roads, carparking and landscaped open spaces will be carried out while maintaining most of the existing surrounding hedges and trees of the site. During construction, there will be a change to the landscape and there will be negative visual impacts for residents and visitors to the areas adjacent to the site associated with construction activity.</p> <p>Tree protection shall be provided to retain the character of the existing trees and hedgerows.</p> <p>Although the existing hedgerow along the Carnew Road and Kilnahue Lane shall be removed in order to provide a public path and associated upgrades to the roads, it is proposed to retain the existing mature trees and shrubs along the perimeter of the site.</p> <p>The development shall be carried out in an organised basis, thus reducing the visual impact upon the environment; however, the impact on the initial area of construction shall be moderate to significant. The remedial measures proposed include the implementation of appropriate site management procedures – such as the control of site lighting, storage of materials, placement of compounds, delivery of materials, car parking, etc. Visual impact during the construction phase will be mitigated somewhat through appropriate site management measures and work practices to ensure the site is kept tidy, dust is kept to a minimum, and that public areas are kept free from building material and site rubbish.</p> <p>Site hoarding will be appropriately scaled, finished, and maintained for the period of construction of each section of the works as appropriate. To reduce the potential negative impacts during the construction phase, good site management and housekeeping practices will be adhered to. The visual impact of the site compound and scaffolding visible during the construction phase are of a temporary to short term nature only and therefore it is expected that this will require no remedial action other than as already stated.</p> <p>The retention of the hedgerows surrounding the site shall reduce the visual impact of the proposal during construction.</p>

	<p>As the development increases and phasing continues, the improvement in terms of landscape elements, trees, hedgerows and woodland planting, the growth shall reduce the visual impact and in the long term and shall be a positive impact.</p> <p>The greatest impact shall be the views through the site as they will become determined by the existing landscape elements of trees and hedges. As the boundary are being retained and augmented by the introduction of new trees and planting, the predicted impact during construction shall be moderate in the short-term depending on the length of time on site.</p> <p>Operational Phase</p> <p>The mitigation measures, including measures taken during the design stage, which have evolved throughout the design process, that have been adopted in the proposed scheme and are detailed in the Landscape Plan, are as follows:</p> <ul style="list-style-type: none">• The retention or replacement of some of the existing landscape structure of field boundaries, where possible, as well as boundary trees and an area of woodland to the North-west and also internally. A large, cohesive area of open space has been provided consistent with that set out in the LAP.• The architectural layout aims to address visual impacts by proposing variety in scale, massing and elevational treatment of buildings and by creating positive frontage onto the Carnew Road and Kilnahue Lane.• The extensive planting of additional trees and shrubs throughout the site and on the site boundaries in keeping with the wider landscape character, will over time, reduce the visual mass of the buildings, soften the development over time from various viewpoints and assist in integrating the development into the landscape.• Native and pollinator species (as per The All Ireland Pollinator Plan 2021 – 2025) planting for biodiversity has been incorporated into the scheme and this includes a native tree belt / woodland area, wildflower meadows and semi natural grassland.• It is proposed that the topsoil from the calcareous grassland to the North of the site is retained, stored appropriately and re-spread and allowed to recolonise naturally to form the semi-natural grassland and meadow areas denoted in the Landscape Plan. This is to retain the existing species on site.• Several connected public open spaces have been designed as part of an overall design strategy that focuses on creating a distinctive ‘sense of place’ and individual character for the development area. The design of public open space that forms part of a network of spaces that includes areas for passive and active recreation, social / community interaction and play facilities catering for all ages. This area of open space corresponds to that as indicated in the LAP• The hedgerows that are to be removed shall and reinstated with additional native tree planting in the open spaces, tree planting to the street scape and communal areas. An urban forest is proposed to further screen the buildings and create a strong visual screening setting the buildings into the landscape.
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	<p>Application of best practice horticultural methods to ensure that mitigation measures establish and grow appropriately.</p> <p>Landscape works are proposed to reduce and offset any adverse impacts generated due to the proposed development, where possible. The planting of substantial numbers of new trees and other planting in the open spaces, at the site boundaries and internal roads, both native and ornamental varieties, will enhance the overall appearance of the new development and compensate for the removal of hedgerows and trees where needed for the construction works, and increase the overall landscape capacity of the site to accommodate development.</p> <p><u>Monitoring Proposed:</u></p> <p>A Landscape Architect shall be appointed to oversee and monitor the project at construction and operational stage. They shall liaise with other project members in relation to any existing and proposed trees.</p> <p>The landscape architect shall overview all hard and soft landscape works and liaise with resident engineer, project team and contractor. The landscape architect shall also inspect the trees; however, most of the monitoring works shall be during and post-civil construction stage. The landscape architect shall review and instruct on details of soft planting, trees, shrubs and of paving materials, walls, and railings.</p> <p>During the operational stage, the Landscape Architect and Arborist shall review the state of all planting and trees, The landscape architect shall review for period of 18 months, from practical completion of each stage the standard and quality of the materials and workmanship. A final certificate of completion shall be issued by the landscape architect in respect of this.</p>
<p>Materials Assets – Traffic and Transport</p>	<p><u>Mitigation Measures Proposed:</u></p> <p>Construction Phase</p> <p>A Preliminary Construction, Demolition and Waste Management Plan (CDWMP) has been prepared by Waterman Moylan for the subject development in order to provide guidance on how to minimise the potential impact of the construction stage of the proposed development on the safety and amenity of other users of the public road. The CDWMP, which accompanies the documentation package under a separate cover, considers the following aspects:</p> <ul style="list-style-type: none"> - Dust and dirt control measures; - Noise assessment and control measures; - Routes to be used by vehicles; - Working hours of the site; - Details of construction traffic forecasts; - Times when vehicle movements and deliveries will be made to the site; - Facilities for loading and unloading; and - Facilities for parking cars and other vehicles. <p>Further to the above, a detailed Construction Management Plan (CMP) will be prepared by the main contractor prior to the construction stage. This document,</p>

which will be prepared in coordination and agreement with the Local Authority, will outline site logistics and indicate the following:

- Site access location;
- Site boundary lines;
- Tower crane locations;
- Vehicle entry and exit routes to/from the site;
- Location of loading and unloading areas;
- Location of site offices and welfare facilities;
- Location of material storage areas; and
- Banksmen locations.

Through the implementation of the detailed CMP prior to the construction stage, it is anticipated that the effect of traffic on the surrounding road network during the construction stage will be minimal.

Operational Phase

The analysis of the road network surrounding the subject site has shown that the existing and proposed junctions will operate well below capacity for the future assessment years with the baseline traffic factored up and the inclusion of the proposed development trips. No upgrades to the existing junctions are warranted to accommodate the proposed development.

However, in order to encourage residents and staff of the proposed development to reduce the dependence on private car and avail of sustainable forms of transport such as walking, cycling and public transport, a Travel Plan has been prepared for the subject development and accompanies the subject application under a separate cover.

The Travel Plan sets out a number of specific actions to be implemented with the objective of promoting sustainability, enhancing public transport and reducing the use of private car, such as:

- Advising residents and staff of the development about the upgraded local pedestrian and cycling network facilities such as dedicated pedestrian crossings, wide footpaths and dedicated cycle lanes;
- Regularly informing residents and staff about the bike to work scheme which may be available from their employers;
- Providing information to residents and staff about tax incentives for public transport users;
- Publicising student LEAP travel cars and associated benefits;
- Advising residents and staff regarding local bus routes and their nearest bus stops, the nearest train station, and the travel time to/from Dublin City Centre, Dublin Airport, Wexford City Centre and other key destinations;
- Providing secure cycle parking within the proposed development;
- Providing information regarding car sharing benefits.

The proposed upgrade works on Kilnahue Lane and R725 Carnew Road improve the pedestrian and cyclist network in the surrounding area. The proposed footpaths and cycle lanes will connect to existing facilities along Kilnahue Lane and R725 Carnew

	<p>Road which are part of the route towards Gorey town centre and public transport facilities.</p> <p><u>Monitoring Proposed:</u></p> <p>Construction Phase</p> <p>During the construction phase the following monitoring is advised:</p> <ul style="list-style-type: none"> - Construction vehicles routes and parking; - Internal and external road conditions; - Construction activities hours of work. <p>The specific compliance exercises to be undertaken in relation to the range of measures detailed in the final Construction Management Plan will be agreed with the Planning Authority.</p> <p>Operational Phase</p> <p>During the operational phase, the following monitoring is advised in order to further reduce the already minimal traffic effects predicted from the proposed development:</p> <ul style="list-style-type: none"> - Carparking capacity and associated occupancy. - Cycle parking capacity and associated occupancy. - Public transport serving Gorey town including location of closest bus stops, train station, service frequency and routes, and commuting times from key towns and cities. <p>The Travel Plan for the proposed development should be monitored by the Management Company for the apartments and updated at regular intervals. This will enable tracking in terms of reduction in the dependence on private car journeys and a shift towards sustainable transport options such as walking, cycling and the use of public transport.</p>
<p>Cultural Heritage</p>	<p><u>Mitigation Measures Proposed:</u></p> <p>The isolated sites and features of archaeological potential identified by testing will be fully excavated in advance of the development. This mitigation measure is appropriate to the nature and scale of the features identified during the testing and is in accordance with best practice.</p> <p>Archaeological monitoring of groundworks associated with the proposed development will be undertaken by a licensed archaeologist. This will ensure the full recognition of, and the proper excavation and recording of, all archaeological soils, features, finds and deposits which may be disturbed below the ground surface. All archaeological issues will have to be resolved to the satisfaction of the DHLGH and the NMI. The archaeologist will have provision to inspect all excavation to natural soil level and to temporarily halt the excavation work, if and as necessary. They will be given provision to ensure the temporary protection of any features of archaeological importance identified. The archaeologist will be afforded sufficient time and resources to record and remove any such features identified.</p>

	<p>The attention of the developer has been drawn to the relevant portions of the National Monuments Acts (1930-2004), which describes the responsibility of the site owners to report the finding of archaeological items if any should be discovered during construction works to the National Museum of Ireland (Irish Antiquities Division) and the National Monuments Service of the DHLGH who will determine the nature and extent of archaeological work to be carried out on site. This legislation also outlines the developer’s obligation to facilitate and fund all archaeological works that may be considered necessary by the National Monuments Service or the National Museum in respect of development proposals.</p> <p>No further mitigation measures are required with regard to architectural heritage</p> <p><u>Monitoring Proposed:</u></p> <p>No post-construction monitoring will be required for the proposed development.</p>
<p>Material Assets – Utilities & Waste</p>	<p><u>Mitigation Measures Proposed:</u></p> <p><u>Electricity</u></p> <p><i>Construction Phase</i></p> <p>Additional survey works will be carried out to confirm the location of existing services using service records, GPR surveys and slit trenches to ensure that their position is accurately identified before excavation works commence.</p> <p>All works will be carried out in accordance with ESB Networks methods and standards</p> <p>Live connections to the existing electricity network will only be made by ESB Networks</p> <p><i>Operational Phase</i></p> <p>It is not envisaged that any other remedial or reductive measures will be necessary upon the completion of the development.</p> <p><u>Telecommunications</u></p> <p><i>Construction Phase</i></p> <p>Additional survey works will be carried out to confirm the location of existing services using service records, GPR surveys and slit trenches to ensure that their position is accurately identified before excavation works commence.</p> <p>All works will be carried out in accordance with Eir & Virgin Media methods and standards</p> <p>Live connections to the existing electricity network will only be made by Eir & Virgin Media</p> <p><i>Operational Phase</i></p>

	<p>It is not envisaged that any other remedial or reductive measures will be necessary upon the completion of the development.</p> <p><u>Waste</u></p> <p><i>Construction Phase</i></p> <p>A Construction and Demolition Waste Management Plan (C&DWMP) has been prepared to deal with waste generation during the construction phase of the proposed Project and is included as part of the application packs. This document was prepared in accordance with best practice guidelines. This document must be implemented during the construction works.</p> <p><i>Operational Phase</i></p> <p>Operational waste management must be managed by a designated management company on site and the appointed licenced waste contractor which will ensure the sustainable management of domestic and commercial waste arising from the development in accordance with legislative requirements and best practice standards.</p> <p><u>Monitoring Proposed:</u></p> <p>The proposed monitoring of the various built services during the operation stage will include:</p> <ul style="list-style-type: none">• The construction and waste management plans will be adhered to.• The provision of utility services including electricity, gas and broadband will be monitored by the relevant utility providers.
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Table 16.1 Summary of Mitigation & Monitoring Measures