CHAPTER 3

POPULATION AND HUMAN HEALTH

3.0 POPULATION AND HUMAN HEALTH

3.1 INTRODUCTION

The 2014 EIA Directive (2014/52/EU) has updated the list of topics to be addressed in an EIAR and has replaced 'Human Beings' with 'Population and Human Health'.

This chapter of the EIAR was prepared by Kate Kerrigan, BA (Hons), MSc, MRTPI, and approved by Paul Turley, Executive Director, BA, MRUP, Dip Environmental & Planning Law, MIPI, of John Spain Associates, Planning and Development Consultants. In preparing this chapter we have regard to the other inputs to this EIAR and the planning application, in particular the chapters addressing Air Quality and Climate, Noise and Vibration and Traffic and Transport, and the separate reports addressing construction and operational waste management prepared by AWN and the Construction & Environmental Management Plan prepared by Waterman Moylan.

Population and Human Health comprise an important aspect of the environment to be considered. Any significant impact on the status of human health, which may be potentially caused by a development proposal, must therefore be comprehensively addressed.

Population and Human Health is a broad ranging topic and addresses the existence, activities and wellbeing of people as groups or 'populations'. While most developments by people will affect other people, this EIAR document concentrates on those topics which are manifested in the environment, such as new land uses, more buildings or greater emissions.

3.2 STUDY METHODOLOGY

At the time of writing there is no specific guidance from the EU Commission on the 2014 EIA Directive to indicate how the new term 'Human Health' should be addressed. Therefore, this chapter of the EIAR document has primarily been prepared with reference to recent national publications which provide guidance on the 2014 EIA Directive including the Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018) and the Guidelines on the information to be contained in environmental impact assessment reports, published by the EPA in May 2022.

The preparation of this chapter has also had regard to the guidance published by the European Commission in 2017 on the preparation of EIARs (taking account of the changes introduced under the 2014 Directive). The European Commission guidance states the following in relation to the assessment of Human Health:

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

In accordance with this approach to Human Health espoused in the Commission Guidance, this chapter addresses human health in the context of other factors addressed elsewhere in further detail within the EIAR where relevant. Relevant factors identified include inter alia water, air quality, noise, waste management and the risk of major accidents and disasters.

The insight provided by the IEMA Health in Environmental Impact Assessment A Primer for a Proportionate Approach document (2017) has also been considered in the preparation of this chapter. The IEMA document

posits that human health spans environmental, social and economic aspects and does not merely represent an absence of disease. A broad conception of human health is put forward, that should encompass factors such as local economy and community, rather than relying on a narrower focus on biophysical health factors and determinants. In this regard, the current chapter seeks to address population and human health in a wholistic manner, including consideration of economic factors, settlement patterns, landscape and visual impact, and land-use.

The 2018 EIA Guidelines published by the DHPLG state that there is a close interrelationship between the SEA Directive and the 2014 EIA Directive. The Guidelines state that the term '*Human Health*' is contained within both of these directives, and that a common interpretation of this term should therefore be applied.

To establish the existing receiving environment / baseline, several site visits were undertaken to appraise the location and likely and significant potential impact upon human receptors of this proposed development. A desk-based study of published reference documents such as Central Statistics Office Census data, the ESRI Quarterly Economic Commentary, the *Regional Spatial and Economic Strategy for the Eastern and Midlands Regional Assembly, 2019,* the *Kildare County Development Plan 2017-2023* and the *Celbridge Local Area Plan 2017-2023* was also carried out in preparing this EIAR and completed in June 2022.

It should be noted that there are numerous inter-related environmental topics described throughout this EIAR document which are also of relevance to Population and Human Health. Issues such as the potential likely and significant impacts of the proposed development on landscape and visual impact, archaeology and cultural heritage, air quality and climate, noise and vibration, water, land and soils, microclimate, material assets including traffic and transport impacts, are of intrinsic direct and indirect consequences to human health. For detailed reference to particular environmental topics please refer to the corresponding chapter of the EIAR and other accompanying application reports. The daylight and sunlight assessment of the development is a separate matter to the EIAR and is addressed in a standalone report accompanying the application.

The Guidelines on the information to be contained in environmental impact assessment reports, published by the EPA (2022) states that '*in an EIAR, the assessment of impacts on population & human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in the EIAR e.g. under the environmental factors of air, water, soil etc'.*

This chapter of the EIAR document focuses primarily on the potential likely and significant impact on Population, which includes Human Beings, and Human Health in relation to health effects/issues and environmental hazards arising from the other environmental factors. Where there are identified associated and inter-related potential likely and significant impacts which are more comprehensively addressed elsewhere in this EIAR document, these are referred to. The reader is directed to the relevant environmental chapter of this EIAR document for a more detailed assessment.

3.3 THE EXISTING RECEIVING ENVIRONMENT (BASELINE SITUATION)

3.3.1 Introduction

A description of the relevant aspects of the current state of the environment (baseline scenario) in relation to population and human health is provided below. Specific environmental chapters in this EIAR provide a baseline scenario relevant to the environmental topic being discussed. Therefore, the baseline scenario for separate environmental topics is not duplicated in this section; however, in line with guidance provided by the European Commission, the EPA and the DHPLG, the assessment of impacts on population and human health refers to those environmental topics under which human health effects might occur, e.g. noise, water, air quality etc.

An outline of the likely evolution without implementation of the project as regards natural changes from the baseline scenario is also provided. This is the "Do Nothing" scenario.

The existing environment is considered in this section under the following headings:

- Economic Activity
- Social Patterns;
- Land Use and Settlement Patterns;
- Employment;
- Health & Safety; and
- Risk of Major Accidents and Disasters.

3.3.2 Economic and Employment Activity

The CSO's Quarterly Labour Force Survey for Q4 of 2021 (the most recent available survey at the time of writing), indicated that nationally there was an increase in employment since Q4 2020 of +10,1% or 229,200 individuals in total, bringing total employment to 2,506,000. The total number of unemployed people reduced to 127,400 people, a decrease from 141,800 people in Q4 2020. Unemployment decreased by 10,600 (-13.5%) for males to 68,100 in the year to Q4 2021 compared with a fall of 3,700 (-5.9%) to 59,200 for females over the same period. The unemployment rate for males was 4.9% in Q4 2021 down from 6.1% a year earlier while the corresponding rates for females were 4.8% and 5.7% respectively.

The long-term unemployment rate increased from 1.5% to 1.7% between Q4 2020 and Q4 2021. Over a third (34.8%) of unemployed persons were in long-term unemployment in Q4 2021 which is up from 26.0% a year earlier.

The employment rate for those aged 15-64 was 73.0% in Q4 2021 compared to 67.0% in Q4 2020 and 70.1% in Q4 2019. In Q4 2021, the employment rate for males aged 15-64 years was 76.9% compared to 69.1% for females.

In the *ESRI's Quarterly Economic Commentary, Winter 2021*, ESRI project strong overall growth this year with a 13.6% increase in Irish GDP and the domestic economy as measured by modified domestic demand (MDD) was expected to grow by 6.2% in the present year. Into 2022, the ESRI expect a continued strong performance of the economy, with both MDD and GDP set to increase by 7 per cent. However, in the latest *ESRI's Quarterly Economic Commentary, Spring 2022*, ESRI note that they have revised downwards their Winter 2021 forecasts from previous estimates given heightened global uncertainty surrounding the Russian invasion of Ukraine in February 2022. Even with this accounted for, it is expected that Irish GDP and MDD will increase by 6.2% and 5.0% respectively in 2022.

The above sources demonstrate that the national economy and employment levels, whilst currently experiencing uncertainty related to the Russian invasion of Ukraine, are expected to experience economic growth again further through 2022. The Government is faced with the challenge of recovering economic activity and employment levels, following the Covid-19 pandemic, which in turn is expected to result in an increased demand for residential dwellings particularly within the Dublin Metropolitan area, which has been a long-established challenge for the Government as reflected in a number of Government policies and guidelines seeking to address the issue of housing supply.

3.3.3 Social Patterns

This section explores the characteristics of the area from a socio-economic perspective, drawing on the most recently available statistical information from Census 2016 and other sources, noting that the 2021 census has been postponed due to the Covid-19 pandemic and the next census (Census 2022) took place on the 3rd of April 2022, with results not yet being available. It is predicted that preliminary results will be available in mid-2022 and definitive results will be made available on a phased basis from April to December 2023.

The proposed development site at Ballyoulster, Celbridge, is situated within the Electoral Division (ED) of Donaghcumper.

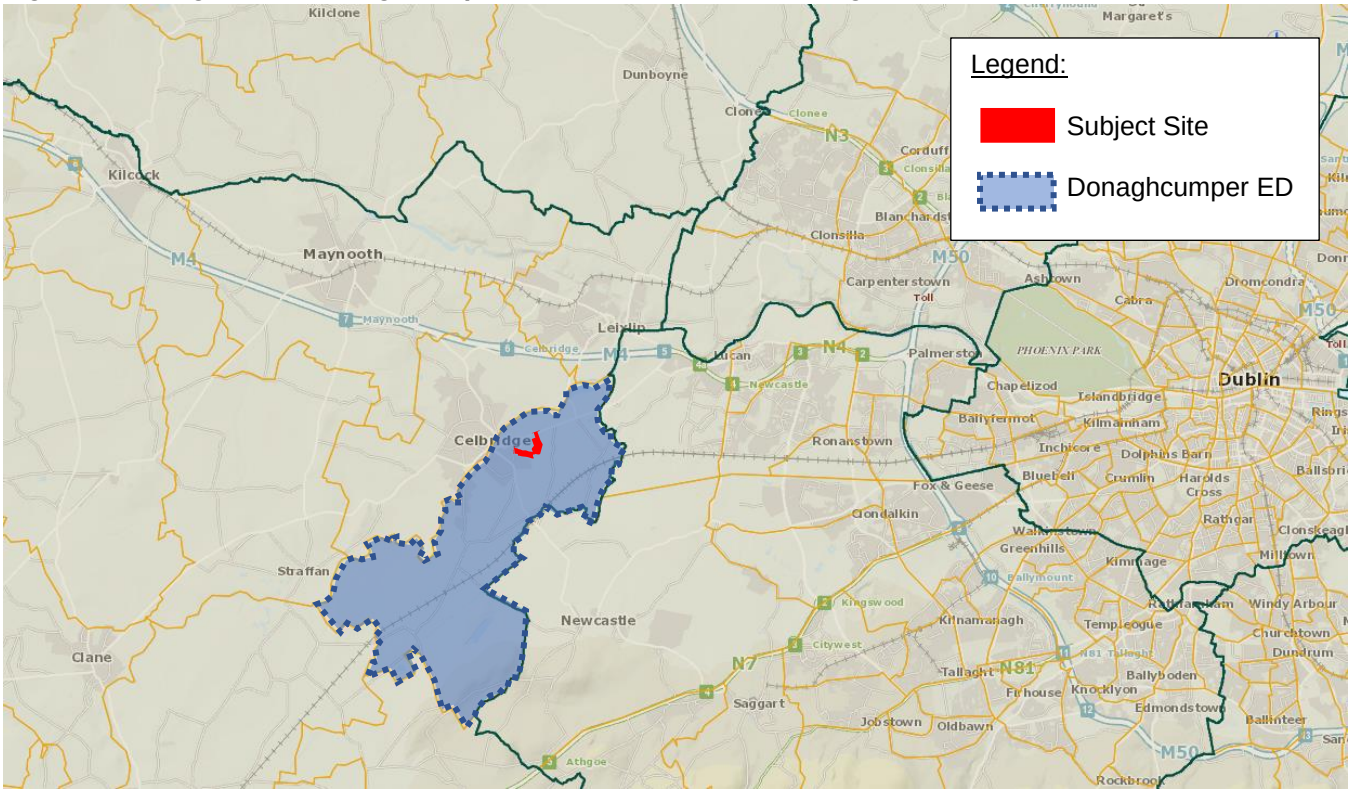
The CSO data illustrates that the population of the Irish State increased between 2011 and 2016 by 3.8%, bringing the total population of the Irish State to 4,761,865. The rate of growth slowed from 8.1% in the previous census, attributable to the slower economic activity in the early part of the intercensal period resulting in a reduced level of immigration, albeit offset to a degree by strong natural increase. The economy subsequently recovered with consequent population growth predominantly attributed to natural increase, greater economic activity, increased job opportunities and continued immigration. The subject site is located within the small areas designated as '087029012' and '087029010', as identified using SAPMAPs, which had respectively a population of 307 and 313 as of the 2016 census.

Table 3.1: Population change in the State, Dublin County, Kildare County and Donaghcumper ED 2011-2016 (Source: CSO)

Area	Number of Persons		
	2011	2016	% Change 11-16
Ireland - State	4,588,252	4,761,865	3.8
Dublin County	1,273,069	1,347,359	5.8
Kildare County	210,312	222,504	5.8
Electoral Division of Donaghcumper	5,710	6,257	9.6

Donaghcumper electoral division saw a marked population increase during the 2011-2016 intercensal period, following the wider trend in County Dublin or Kildare over the intercensal period 2011-2016. The provision of additional housing and supporting infrastructure and services, as proposed in this application, will help to support the growing demand for housing and existing services in the area.

Figure 3.1: Image of the Donaghcumper electoral division indicating site location



Source: Central Statistics Office - Census 2016 Small Area Population Statistics

3.3.4 Land Use & Settlement Patterns

The predominant land use immediately surrounding the subject site is residential use to the south and west of the site A and to the east of the site B, agriculture lands to the east of the sites A and C, a school site reserved by the Department of Education, currently undeveloped, to the north of the site A and to the west of the sites B and C, Donaghcumper Cemetery to the west of site B and to the north of the school site mentioned before, and Dublin Road (R403) to the north of the site B. The wider Donaghcumper area is characterised by medium density residential developments.

The proposal relates to a strategic housing development of 344 no. units in two and three houses detached, semi-detached houses, three storey terraced houses and duplex apartments/apartments to the southeast of Celbridge town centre.

The subject site is located within the administrative area of Kildare County Council and is therefore subject to the objectives and policies contained within the Kildare County Development Plan 2017-2023. The site is also located within the Celbridge Local Area Plan 2017-2023 area. The subject land is primarily zoned 'C: New Residential' which seeks *'to provide for new residential development'* and partly 'E: Community and Educational' with the objective *'to provide for education, recreation, community and health'*.

The proposed residential units and public open space are located solely on lands zoned 'C: New Residential' in accordance with the Celbridge Local Area Plan Land Use Zoning Objectives Map. The proposed uses (residential and open space) are permitted in principle under this zoning objective. The proposed childcare facility is within Site A, on lands zoned 'E: Community and Educational'. Section 13.4 of the LAP confirms that a 'creche/playschool' use is a permitted in principle use within the zoning objective.

The proposed access road connecting the Dublin Road to the Shinkeen Road and is referred to as 'The Boulevard' will serve the residential development and future schools site to the north, is located partly on lands zoned 'E: Community and Educational' (north of Site A) and partly on lands zoned 'C: New Residential'. The scheme includes pedestrian and cycle links along the Boulevard to serve the schools and the residential development, and it also includes 2 no. access points to the school lands. The Site Layout Plan also allows for additional landscape buffers / ancillary open space areas (partly on 'E' zoned lands) between the boulevard, the lands reserved for the schools and the proposed residential development in Site A (these are not factored into the public / communal open space requirements for the residential development).

This proposed access road is considered appropriate and in keeping with the land use zoning. Whilst part of the access road is located on the 'E' zoned lands, this is considered appropriate as the proposed access road will serve both the new residential development (including Phase 1 and future phases) and also provides the access to the lands reserved for the Department of Education in relation to the provision of the 3 no. schools. This also accords with the LAP and the objectives for Ballyoulster KDA, which it states that vehicular access to this KDA should be provided from the Dublin Road, Shinkeen Road and the Loughlinstown Road and should provide for continuous routes through the KDA that connect to surrounding areas.

The site is well located being within c. 830m of Celbridge main street from Shinkeen Road entrance and c. 1.1km of Celbridge main street from Dublin Road entrance. The site is within a 10-minute drive of the N4, M4 and M50 and within a 25-minute drive of the Dublin Airport and the Port Tunnel.

The site is well serviced by public transport. The Traffic and Transport Assessment prepared by DBFL Consulting Engineers which provides full details on the accessibility of the site. In summary, the subject site is serviced by several existing bus routes, with the Phase Two BusConnects Network Redesign commenced and operating within Celbridge. The nearest existing bus stops are located on the Dublin Road (c. 300-400m from the proposed access to Dublin Road) and the Shinkeen Road (c. 140m from the proposed access). Additional bus stops are within walking distance of the subject site on Primrose Hill and within the town centre.

Dublin Bus services C4, C6, X27, X28, L58 and L59 replace the previous Dublin Bus Services 67, 67x and 67n, with two additional 'Local' Routes L58 and L58 providing convenient bus connections to rail services available at the Hazelhatch & Celbridge train station. The C4 bus service operates between Ringsend and Maynooth with a 30 minute frequency whilst the X27 and X28 offer express services between Celbridge and UCD (Belfield) every 15-20 minutes during peak times. The C6 Route provides a nightly service between Maynooth and Ringsend operating between midnight and approx. 05:00. The Go-Ahead Commuter Route 120 is accessible on English Row in Celbridge Town Centre and operates between Connolly Station and Edenderry. The subject site will also benefit from an additional orbital Route W6 which will provide a connection towards Maynooth to the north-west and Tallaght to the south-east. The route will travel via Citywest and will have a frequency of 30 minutes on both weekdays and weekends.

The Traffic and Transport Assessment prepared by DBFL provides a summary of the bus capacity identified during peak public transport times and identifies the existing bus services have the capacity to accommodate up to 6244 no. passengers in the AM peak period and 6356 no. passengers in the PM peak period.

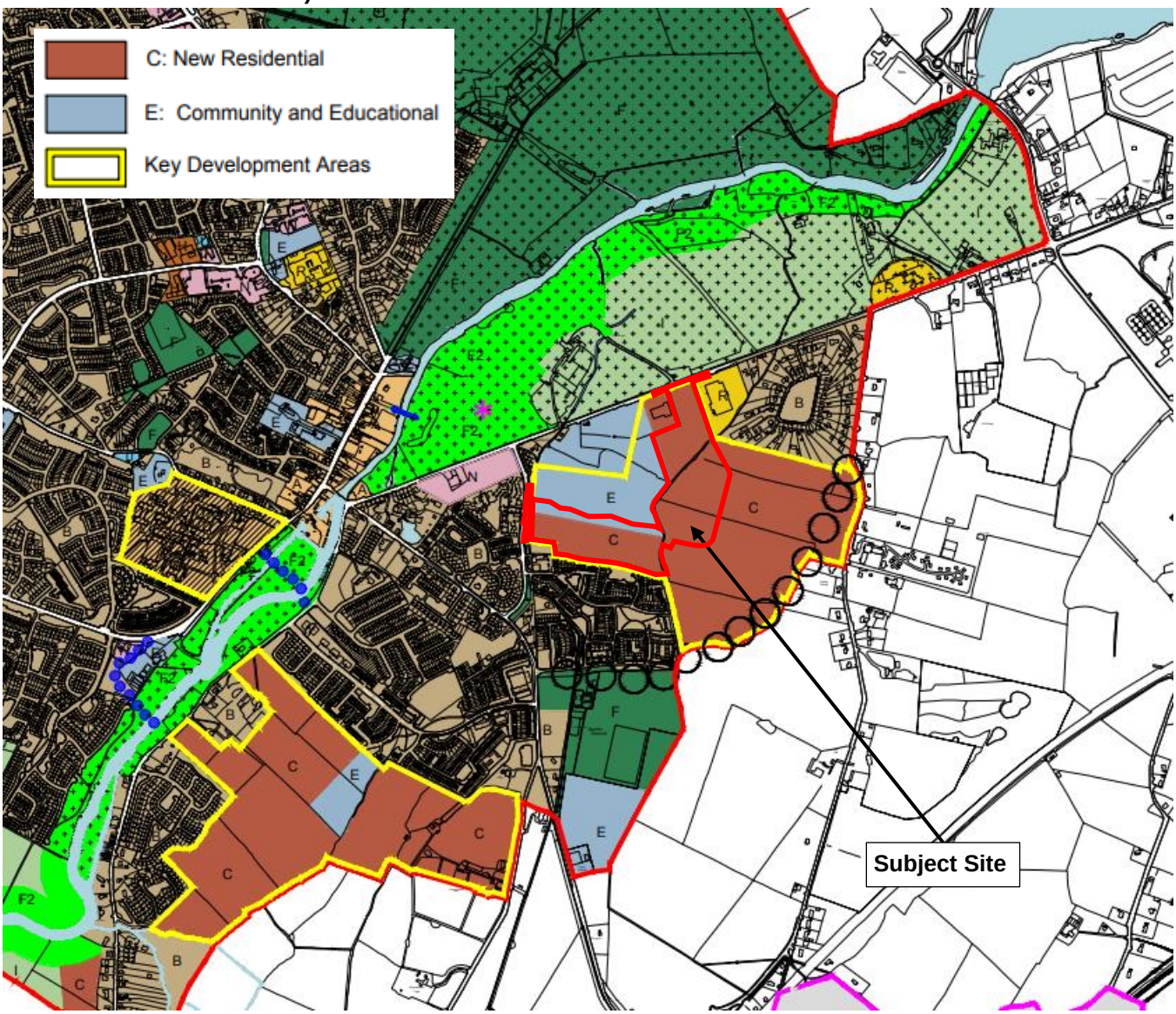
The Hazelhatch and Celbridge Train Station is located approximately 1.9km south of the subject site and provides frequent train services to Dublin Heuston Station as well as regional routes serving Cork, Galway, Limerick and Waterford. The newly implemented BusConnects 'Local' Routes L58 and L59 (which are easily accessible from the subject site location) provide bus access to this station. The Traffic and Transport Assessment prepared by DBFL sets out the existing rail capacity analysis reveals that, during peak travel periods, the existing rail services have the capacity to accommodate up to 6812 no. passengers in the AM peak period and 6288 no. passengers in the PM peak period.

The train station is part of the Dart+ programme and the Dart + South West Project from Hazelhatch & Celbridge to the City Centre. The Dart + programme aims to modernise and improve existing rail services in the Greater Dublin Area, delivering frequent, modern, electrified services to Celbridge. The statutory consultation period as part of the Railway Order application process for the Dart + South West is expected to commence in Summer 2022 / autumn 2022 and will further enhance the accessibility of Celbridge with increased train capacity and frequency of services.

The adjoining residential development consists of a range of single storey detached, semi-detached and terraced residential housing units to the north-east, a range of two storey detached, semi-detached and terraced residential housing units to the south-west and a range of tree storey detached, semi-detached and terraced residential housing units to the west. The wider area consists mainly of established residential neighbourhoods of a medium residential density at the southwest, west and northeast of the site and consist of undeveloped lands to the southeast and the north beyond the Cemetery and the Road R403.

The lands to the north of the Site A and the south of the Cemetery are currently undeveloped and reserved for the Department of Education in relation to the provision of the 3 no. schools equate to 7.2ha in total, including the lands that were previously identified in the LAP to extend the Donaghcumper Cemetery, which KCC have since confirmed are not required / suitable for the cemetery extension.

Figure 3.2: Extract from Map 13.1 Land Use Zoning, Celbridge Local Area Plan 2017-2023 (approximate site location outlined in red)



In terms of housing delivery, the proposed development includes the provision of 344 residential units. There is a significant and established housing need in Dublin and the State as a whole, as recognised within Government housing and planning policy, including the 2016 Rebuilding Ireland Plan for Housing and Homelessness and the recently published Housing for All (2021).

Recent trends show that population growth is set to continue in the wider Eastern and Midlands Region having regard to the Region's young demographic profile and a return to net inward migration as the country returned to economic growth after a severe economic downturn from 2007. In fact, the level of in-migration to Ireland experienced over the 2018 and 2019 (prior to the Covid-19 pandemic) was in the order of 30,000.

While the number of residential units being completed yearly nationally has rebounded, the level of completions remains significantly less than the estimated equilibrium demand for housing in the State. Moreover, the current level of housing need and demand is not at equilibrium, being significantly augmented by the extremely low level of housing completions in the decade since 2010. Over this period, a significant shortfall in housing has amassed year on year, which is reflected in the data collected in Census 2016 – which revealed overcrowding and increasing numbers of households living in cramped conditions.

It is further noted that the number of housing completions in the state have been constrained since March 2020 due to the impact of the ongoing Covid 19 public health crisis. There had been a gradual increase in the number of completions over the past decade as supply increased to meet the level of structural demand, estimated by the ESRI to be in the region of 35,000 new homes a year.

The ESRI (2022) note in the order of 20,430 residential completions during 2021, while an increase is expected in 2022 to a forecasted output of c. 26,000 units. A further increase to 30,000 units in 2023 is forecast within the ESRI quarterly economic commentary for Spring 2022. An increase in construction activity over the coming years is also likely to be facilitated by recently announced policy measures contained within the Housing for All plan.

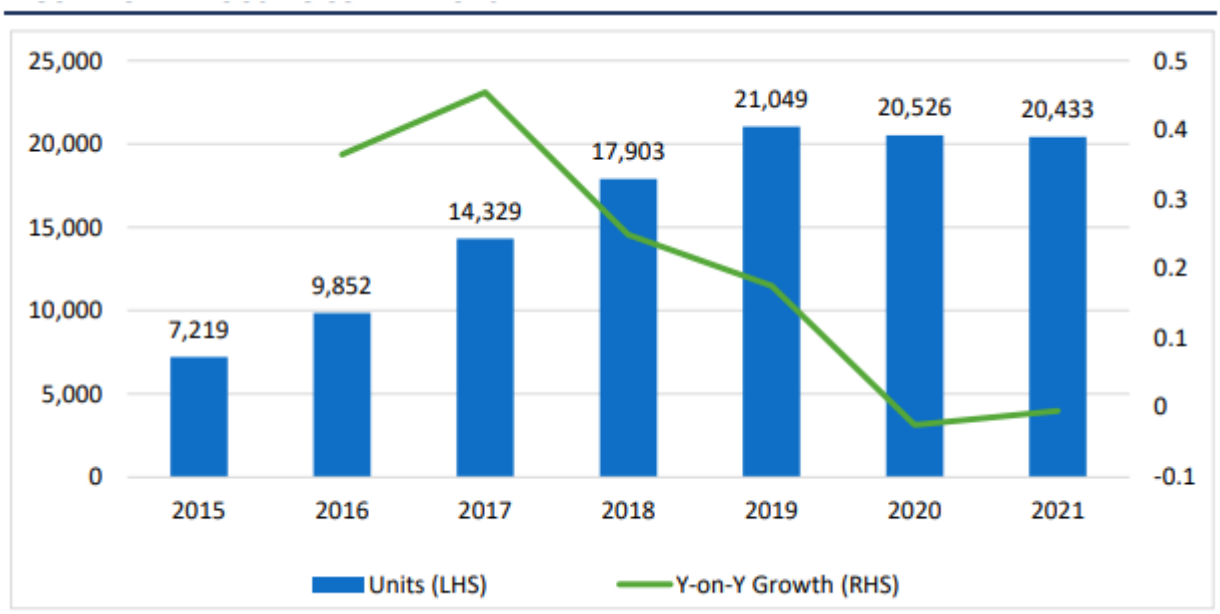


Figure 3.3: Yearly housing completions for the State (ESRI Quarterly Commentary Spring 2022)

Census 2016 revealed an increase in the national housing stock of just 8,800 units during the five year intercensal period (taking into account obsolescence during that period) representing an increase of just 0.4 percent (as shown in the figure below).

This is notable given the increase in population seen concurrently (173,613 or 3.8%). Furthermore, almost 40% of these additional units were one off houses, the majority of which would never have come to market. Census 2016 also revealed a rise in the average household size (from 2.73 to 2.75) (CSO, 2017). This was attributed to household formation falling behind population growth, another indicator of lacking housing availability and increasing housing need.

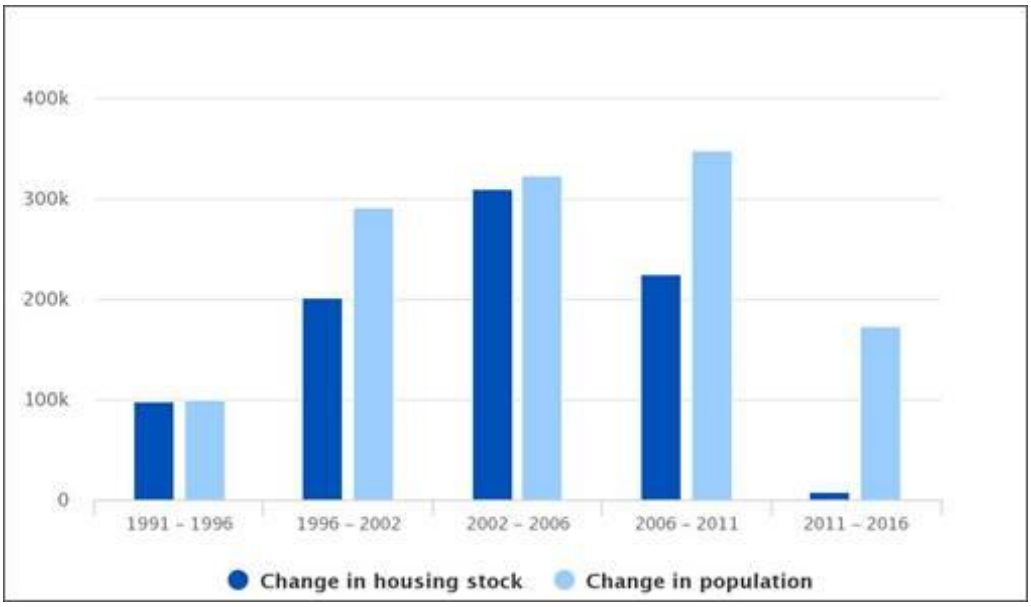


Figure 3.4: Changes in population and housing stock for Ireland, 1991-2016 (data from the Central Statistics Office, 2017)

The 2011-2016 intercensal period also saw a notable increase in the number of households with more persons than rooms in their dwelling (see figure below). There were 95,013 permanent households with more persons than rooms according to Census 2016, a 28 per cent rise on the equivalent number in 2011 (73,997).

Close to 10 per cent of the population resided within these households in 2016 at an average of 4.7 persons per household. This is an indicator of increased overcrowding (and housing need) which may be attributed to lack of housing availability and rising costs.

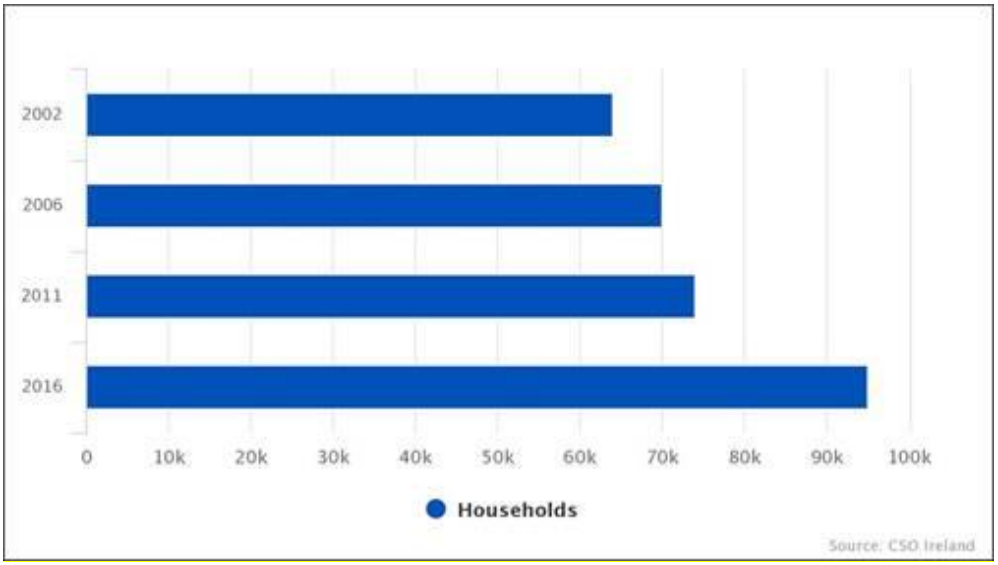


Figure 3.5: Number of households with more persons than rooms (data from the Central Statistics Office, 2017)

These figures set out above all point to a significant and increasing housing need in the state, which is not being met at present, notwithstanding increased housing output in recent years. The subject lands which are zoned for residential development, situated to the south of the Town Centre and close to high quality public transport, offer a suitable location to provide additional higher density residential development in this area.

The Central Bank of Ireland has published a study entitled 'Population Change and Housing Demand in Ireland'[1], which includes the following key points:

- *"Growth in population has significantly exceeded the increase in the housing stock since 2011 and the average household size has risen, reversing a previous long-running trend.*
- *To keep pace with population growth and changes in household formation, our estimates indicate that an average of around 27,000 dwellings would have been required per annum between 2011 and 2019.*
- *Assuming unchanged household formation patterns and net inward migration close to current levels, around **34,000** new dwellings would be required each year until 2030."*

3.3.5 Health & Safety

The closest SEVESO Site (Intel Ireland Limited, Collinstown Industrial Park, Leixlip, Co. Kildare) is located c. 3.7km north of the application site. The site of the proposed development is not in the consultation zone of this SEVESO Site (which has a 1000 meter consultation zone).

The surrounding context consists of a mix of residential, town centre, community and educational, light industry and warehousing, agriculture, neighbourhood centre, utility and services, commercial and tourism and open space public amenity lands. It does not include SEVESO II Directive sites (96/82/EC & 2003/105/EC) which might result in a risk to human health and safety. It is not within the catchment area of a SEVESO Site.

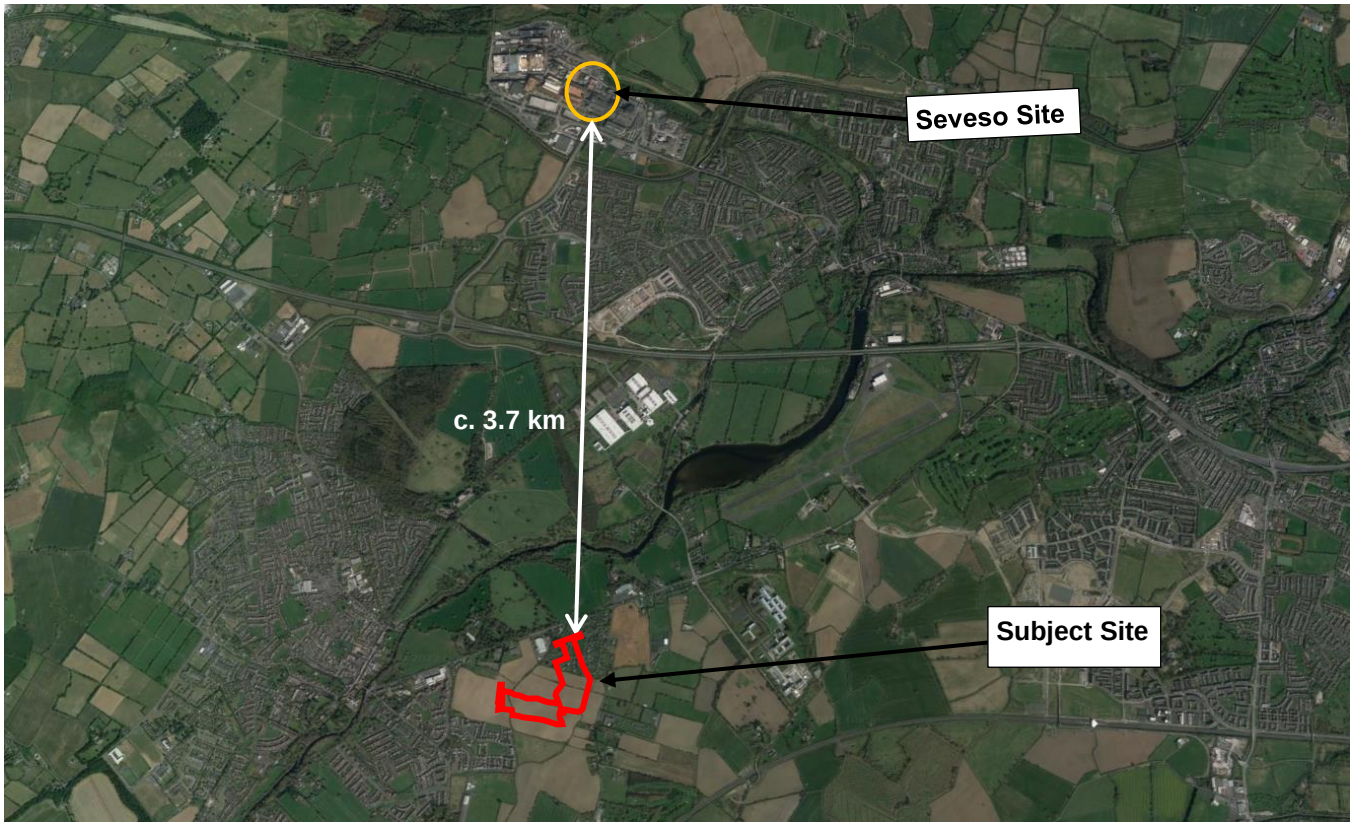


Figure 3.6: Location of the Subject Site and the SEVESO Site (approximate location marked in red and SEVESO Site circled in yellow)
(Source: Google Map)

[1] Available at: https://www.centralbank.ie/news-media/press-releases/press-release-economic-letter-population-change-and-housing-demand-in-ireland-10-december-2019

3.3.6 Risk of Major Accidents and Disasters

The EIA Directive states that an EIAR must include the expected effects arising from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project.

In this respect, taking cognisance of the other chapters contained within this EIAR document, which should be reviewed for further details, it is not considered that the proposed development site presents risks of major accidents or disasters, either caused by the scheme itself or from external man made or natural disasters.

The Land and Soils chapter (Chapter 7 of this EIAR) does not mention any risk of major accidents and disasters for the subject site and states the following

"*A desktop study did not identify any formal designated protection or conservation areas, karst features, geological heritage areas, geo-hazards, or mines / mineral extract in the immediate area of the site.*"

The Statement of Consistency and Planning Report and the Statement of Material Contravention submitted as part of this application confirm that a condition in line with the foregoing would be accepted by the applicant.

3.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

Consideration of the characteristics of the proposed development allows for a projection of the level of impact on any particular aspect of the environment that could arise. In this chapter the potential impact on population and human health is assessed.

A full description of the proposed development is provided in Chapter 2 of this EIAR. A seven year permission is sought for this development which is described as follows in the public notices:

"*The proposed development comprises a Strategic Housing Development of 344 no. residential units (comprising 54 no. 1 beds, 30 no. 2 beds, 210 no. 3 beds and 50 no. 4 beds), a 2 no. storey childcare facility with a GFA of c. 369 sq.m, public and communal open space, landscaping, car and cycle parking spaces, provision of an access road from Dublin Road and Shinkeen Road, associated vehicular accesses, internal roads, pedestrian and cycle paths, bin storage, cycle storage, pumping station and all associated site and infrastructural works.*

The residential component of the development consists 214 no. apartments / duplex units, and 130 no. houses of to be provided as follows:

- *4 no. 3 bed two storey detached houses;*
- *28 no. 3 bed two storey semi-detached houses;*
- *48 no. 3 bed two storey terraced houses;*
- *50 no. 4 bed three storey semi-detached houses;*
- *214 no. duplex apartments / apartments (54 no. 1 beds, 30 no. 2 beds, and 130 no. 3 beds) in a series of 15 no. duplex apartment / apartment blocks of 3 no. storeys in height, and all duplex apartments / apartments are provided with a terrace / balcony or private garden;*

The development includes a total of 585 no. car parking spaces, 4 no. loading bays and a total of 770 no. cycle spaces. The proposal includes hard and soft landscaping, lighting, boundary treatments, the provision of public and communal open space, including 3 no. Local Parks, children's play areas, and an ancillary play area for the childcare facility.

The proposed development includes road upgrades, alterations and improvements to the Dublin Road / R403 and the Shinkeen Road, including the provision of new vehicular accesses and signalised junctions, pedestrian crossing points, and associated works to facilitate the same. The proposal includes internal roads, including 3 no. bridge crossings, cycle paths, footpaths, with proposed infrastructure and access points provided up to the application site boundary to facilitate potential future connections to adjoining lands.

The development includes foul and surface water drainage, pumping station, 3 no. ESB Substations, services and all associated and ancillary site works and development.

3.5 POTENTIAL IMPACT OF THE PROPOSED DEVELOPMENT

3.5.1 Introduction

This section provides a description of the specific, direct and indirect, impacts that the proposed development may have during both the construction and operational phases of the proposed development. As stated, guidance documents from the EPA, the European Commission, and the Department of Housing, Planning and Local Government outline that the assessment of impacts on population and human health should focus on the health issues and environmental hazards arising from the proposed development. A wider consideration of human health effects which do not relate to the factors identified in the EIA Directive is not required. Additionally, this section addresses the population and socioeconomic impacts of the proposed development.

For a more detailed assessment of potential impacts associated with other environmental factors, please refer to specific chapters of the EIAR which assess the environmental topics outlined in the EIA Directive. The Construction and Environmental Management Plan, the Resource and Waste Management Plan (construction waste), and the Operational Waste Management Plan, which are included as standalone reports with this application, also provide a more detailed assessment of the construction, waste and indicative phasing proposals for this development.

3.5.2 Water

Construction Phase

Construction of the proposed development will require the removal of a large part of the topsoil and to facilitate the construction of the housing units, infrastructure service provision, road construction, surface water storage systems etc. Given the extent of disturbance, there is potential for weathering and erosion of the surface soils from precipitation and run-off. The excavation of soil and subsoil layers and new surface water drainage network including overland attenuation storage features to accommodate surface water runoff from the development might have a potential slight, negative, permanent and residual impact on groundwater.

During the course of the construction phase of the proposed development, there is potential, in the absence of mitigation, for surface water runoff to suffer from increased levels of silt or other pollutants, in addition to potential pollution from leaks or spillages from construction activities. These impacts are temporary, as well as for the potential impact of heavy rain fall in open trenches and the discharge of wash water from concrete trucks and discharge of vehicle wheel wash water which have the potential to contaminate the groundwater. The Preliminary Construction and Environmental Management Plan, and the Resource and Waste Management Plan (construction waste), set out how all materials will be managed, stored and disposed of in an appropriate manner, mitigating the potential negative effects as outlined.

Potential impact on water is addressed in Chapter 8 (Water) and a number of mitigation measures are outlined in that chapter of this Environmental Impact Assessment Report. These mitigation measures will serve to minimise potential adverse impacts of the construction phase to the water environment including the stream along the northern site boundary, thereby minimising any associated risk to human health from water contamination. Therefore, the impact of construction of the proposed development in relation to water is likely to be short-term and imperceptible with respect to human health.

Operational Phase

SUDs will be implemented in accordance with the recommendations of the GDSDS and Kildare County Council requirements. In addition, the requirements of *'The Planning System and Flood Risk Management Guidelines for Planning Authorities'* will be adhered to.

In the absence of SUDs measures, surface water run-off discharge rates and flooding downstream from the development sites may be increased because of increase in impermeable surfaces, however with the implementation of SUDS as part of a treatment train approach, there are no predicted impacts on the water and hydrogeological environment arising from the operational phase.

Residual impacts from earthworks haulage and the risk of contamination of groundwater are deemed to be of minor risk. The residual impacts for a residential development, and open space are deemed to be imperceptible post construction (during the operational phase).

Further details on the mitigation measures are set out in Chapter 8 (water) of this EIAR. Therefore, the potential impact on population and human health in this regard is considered to be insignificant.

3.5.3 Noise and Vibration

Construction Phase

Noise and Vibration are addressed in Chapter 10 (Noise and Vibration) which was prepared by AWN Consulting.

During the construction phase there will be extensive site works, involving construction machinery, construction activities on site, and construction traffic, which will all generate noise. The highest noise levels will be generated during the general construction activities and during excavation. The closest noise sensitive locations to the main building works will be the residential units to the east of the site which are at a distance of approximately 20m from the potential construction works. This distance relates to the closest boundary to the nearest residential noise sensitive locations. The remainder of works will take place across the site at varying distances of up to 250m.

Chapter 10 of this EIAR states:

"Considering the closest residential noise sensitive locations to the development lands are at 20m distance, and based on the predicted noise levels above, the associated construction noise impact has the potential to be moderate to significant when construction works are undertaken at locations of the site closest to the nearby noise sensitive receptors.

However, it should be noted that at distances of 50m or greater from the receptors the construction works are not predicted to cause a significant impact. Given that the majority of construction works will take place at distances greater than 50m it is expected that for the majority of the construction period the nearest receptors will experience a moderate effect."

Vibration impacts during this phase will be limited to foundation works. The potential vibration impact during the construction phase if of short-term, neutral and imperceptible impact.

Operational Phase

The main potential for altering the noise environment once the development is operational, and thus impacting neighbouring residential receptors, is road traffic noise associated with the development.

Traffic flow data in terms of the AADT traffic flow figures has been assessed for the opening year and the opening year +15. The calculated change in noise levels during these two periods are summarised in Table 10.15 of Chapter 10. Chapter 10 predicts that the impact in this regard will be negative, long term and not significant.

In relation to the operation of building services plant during the operational stage, Chapter 10 states:

"In this instance, is it best practice to set appropriate noise limits that will inform the detailed design during the selection and layout of building services for the development.

These items will be selected at a later stage, however, they will be designed and located so that there is no negative impact on sensitive receivers within the development itself. The cumulative operational noise level from building services plant at the nearest noise sensitive location within the development (e.g. apartments, etc.) will be designed/attenuated to meet the relevant BS 4142 noise criteria for day and night-time periods as set out in this assessment. Based on the baseline noise data collected for this assessment it is considered an appropriate design criterion is the order of 40 dB $L_{Aeq,15min}$. This limit is set in order to achieve acceptable internal noise levels within residential spaces based on prevailing noise levels in the area.

Taking into account that sensitive receivers within the development are much closer than off-site sensitive receivers, once the relevant noise criteria is achieved within the development it is expected that there will be no negative impact at sensitive receivers off site."

On this basis, the predicted impact is negative, not significant, and long term. The impact in terms of operational stage vibration is also predicted to be negative, not significant, and long term.

Chapter 10 also provides an assessment of the noise levels generated by children playing outdoors at several crèches and kindergartens to measure the potential impact of the proposed childcare facility and states the following:

"Considering the usage of the creche area (e.g. external areas are only expected to be in use for a portion of the 16 hour daytime period) the resultant noise effect due to the creche is not significant and mitigation measures are not required."

There are no expected sources of vibration associated with the operational phase.

3.5.4 Air Quality & Climate

Construction Phase

During the construction phase, site clearance and ground excavation works have the potential to generate dust emissions rising from the operation and movement of machinery on site. This could have a potential impact on population and human health.

Chapter 9 of this EIAR states:

"Dust emissions from the construction phase of the proposed development have the potential to impact human health through the release of PM_{10} and $PM_{2.5}$ emissions. As per Section 9.3.4 and Table 9.5 the area is of low sensitivity to human health impacts from construction dust emissions. There is at most a low risk of human health impacts as a result of the construction phase of the proposed development. Therefore, in the absence of mitigation there is the potential for imperceptible, negative, short-term impacts to human health as a result of the proposed development."

Chapter 9 goes on to state the following:

"Best practice mitigation measures are proposed for the construction phase of the proposed development which will focus on the pro-active control of dust and other air pollutants to minimise generation of emissions at source. The mitigation measures that will be put in place during construction of the proposed development will ensure that the impact of the development complies with all EU ambient air quality legislative limit values which are based on the protection of human health. Therefore, the impact of construction of the proposed development is likely to be negative, short-term and imperceptible with respect to human health."

Operational Phase

In relation to Population and Human Health, Chapter 9 of the EIAR states:

"Traffic related air emissions have the potential to impact air quality which can affect human health. However, the traffic generated by the proposed development does not satisfy the assessment criteria to require an air modelling assessment as outlined in Section 9.2.2 and therefore there is no potential for significant impacts. It can be determined that the impact to human health during the operational stage is neutral, local, long-term and imperceptible."

Chapter 9 further states that *"The impact of the operational traffic associated with proposed development on air quality and climate is predicted to be imperceptible with respect to the operational phase in the long term. Therefore, no site-specific mitigation measures are required other than those set out in Section 9.5.2 in relation to operational phase energy usage."*

3.5.5 Landscape and Visual Impact

Construction Phase

As described in greater detail in Chapter 6- Landscape and Visual Impact Assessment, the construction phase will impact the landscape of the site and immediate environs.

In relation to Landscape Impact, Chapter 6 of the EIAR states:

"During construction the site and immediate environs would be disturbed by construction activity and haulage, and the incremental installation of hard infrastructure, the buildings and finally the green infrastructure. This would cause a high magnitude of landscape change in close proximity to the site (e.g. parts of the Willows and Ballyoulster Park residential estates), a medium magnitude of change for receptors such as the Dublin Road, St Wolstan's Abbey estate and the Shinkeen Road, and a low magnitude of change for receptors such as the Loughlinstown Road.

Considering the degree of exposure and the sensitivity of the various receptors, the significance of the landscape effects during construction would range from 'Significant' (in parts of the Willows and Ballyoulster Park estates), to 'Moderate' (e.g. Dublin Road) to 'Slight' (e.g. the Shinkeen Road, St Wolstan's Abbey and the cultural heritage receptors along the Dublin Road."

In relation to Visual Impact, Chapter 6 of the EIAR states:

"During construction the site and immediate environs would be disturbed by construction activity and haulage, and the incremental installation of hard infrastructure, the buildings and finally the green infrastructure. Construction is an inherently unsightly process and causes negative visual impacts.
The significance of the visual effects during construction would range from 'Significant' (in parts of the Willows and Ballyoulster Park estates), to 'Moderate' (e.g. along stretches of the Dublin Road, Shinkeen Road and in St Wolstan's Abbey estate) to 'Slight' (e.g. the cultural heritage receptors along the Dublin Road, and the Loughlinstown Road)."

Potential construction impacts will arise from:

- Site preparation works and operations
- Site excavations and earthworks
- Site infrastructure and vehicular access
- Construction traffic, dust and other emissions
- Temporary fencing/hoardings, site lighting and site buildings (including office accommodation) Cranes and scaffolding

Potential construction stage impacts, following mitigation, are predicted to vary from slight and neutral to moderate and negative, depending on the stage of construction, and the intensity of site activity. The construction impacts will be of short-term duration.

Operational Phase

Please refer to Chapter 6 of the EIAR 'Landscape and Visual Impacts' and the accompanying verified view photomontages for a more detailed assessment. The proposed development will have a beneficial effect on local townscape, including providing high quality new houses and buildings, providing considerable improvement to the permeability and legibility of its immediate context, and the quality of the public realm. It will be in accordance with planning policy for the area, while the overall effect of the development will be moderately positive impact upon landscape character. The proposed development would protect and in cases enhance the existing landscape features of the site. Visual impacts on nearby and more distant views range from slight to moderate and from neutral to positive, all of which represent long term impacts. The impact on the large majority of the views assessed will be either neutral or positive.

3.5.6 Economic Activity

Construction Phase

The construction phase of the proposed development is likely to result in a positive net improvement in economic activity in the area of the proposed development site particularly in the construction sector and in associated secondary building services industries.

The construction of the development and all associated infrastructure will precipitate a positive impact on construction-related employment for the duration of the construction phase.

The construction phase will also have secondary and indirect 'spin-off' impacts on ancillary support services in the area of the site, such as retail services, together with wider benefits in the aggregate extraction (quarry) sector, building supply services, professional and technical professions etc. These beneficial impacts on economic activity will be largely temporary but will contribute to the overall future viability of the construction sector and related services and professions over the construction period.

The proposed development could have a slight negative economic impact on the surrounding area during the construction phase due to traffic and associated nuisance, dust, and noise. These issues and appropriate mitigation measures are addressed in Chapters 9 & 10 of the EIAR, in the Traffic and Transport Assessment, the preliminary Construction and Environmental Management Plan and the Resource and Waste Management Plan which accompany the application. A Construction Traffic Management Plan will be implemented for the site during the construction process which will minimise disruption to the surrounding road network.

Operational Phase

The operational phase of the proposed development will result in an additional element of residential development. The strategic housing development will provide accommodation for residents in the form of 344

no. high quality residential apartments located on a site which is appropriately situated and serviced for such development in planning terms, of a design and materiality which ensure a high-quality design residential development. This increase in occupancy in the area will enhance local spending power and will assist with the delivery of a critical mass of population which will support a wide range of additional local businesses, services, transport infrastructure and employment opportunities, at a location that will continue to grow in population.

Economic opportunities will also be provided for within the development in the form of the childcare facility which is proposed.

The proposed development will help to meet established housing need and demand within the Dublin Metropolitan Area, at a location which will encourage public transport and active transit modes due to its proximity to good quality public transport and Celbridge Town Centre, and a broad range of existing and permitted uses, facilities and amenities.

The proposal includes 20% Part V provision on site in accordance with the requirements of the Act, which will provide for an enhanced mix of tenures, and add to the existing social housing stock. The overall benefit to the economic activity of the surrounding area resulting from the development can be considered moderate, long term, and positive.

3.5.7 Social Patterns

Construction Phase

The construction phase of the proposed development is unlikely to have any significant impact on social patterns within the surrounding area. Some additional temporary additional local populations may arise out of construction activity. However, these impacts are imperceptible, temporary in nature and therefore not considered significant.

It is acknowledged that the construction phase of the project may have some short-term negative impacts on local residents. Such impacts are likely to be associated with construction traffic and construction noise. These impacts are dealt with separately and assessed elsewhere in the EIAR, including Chapter 2 - Project Description and Alternatives Examined, Chapter 9 - Air Quality and Climate and Chapter 10 - Noise and Vibration. Traffic and transportation impacts are dealt with within Chapter 12.

Such impacts will be short term and in the longer term, the completed scheme will have beneficial impacts for local businesses, residents and the wider community. Any disturbance is predicted to be commensurate with the normal disturbance associated with the construction industry where a site is efficiently, sensitively and properly managed having regard to neighbouring activities. The construction methods employed, and the hours of work proposed will be designed to minimise potential impacts to nearby residents. A Preliminary Construction and Environmental Management Plan and a Resource and Waste Management Plan have been prepared and are submitted with this planning application.

Operational Phase

The addition of new residents and an additional element of employment (within the childcare proposed) to the area will improve the vibrancy and vitality of the area and will help to support existing community and social infrastructure, in addition to further supporting nearby services and businesses. As set out within the Social and Community Infrastructure Audit / Assessment submitted as a standalone report with the application, the provision of a childcare facility will help meet the needs of the proposed development and surrounding area, and there is a considerable range of existing community and social infrastructure proximate to the subject site, which the residents of the proposed development will be able to avail of.

The Social and Community Infrastructure Audit / Assessment also demonstrates that the extra demand created by the proposal for primary and post primary educational facilities will not be significant in relation to current levels of local provision, while increased levels of demand from the scheme is unlikely to result in significant impact on existing services. Notwithstanding this, the north-western parcel of the wider KDA 2 lands are reserved for a new education campus by the Department of Education and will accommodate modern education facilities for the Celbridge area. Having regard to the estimated level of demand and the surrounding school capacity within close proximity of the subject site, it is considered that the existing and planned primary and secondary education infrastructure can accommodate the predicted increase in demand arising from the proposed development and is therefore adequate.

Therefore, while demand for schools in the area is likely to increase based on permitted and future development in the area, the necessary school's infrastructure will be progressed by the Department to meet increase in demand.

The proposed development includes the provision of a childcare facility with a GFA of 369 sq.m. As set out within the Social and Community Infrastructure Audit / Assessment Report, this childcare facility will accommodate the likely demand arising from the proposed development based on the calculation methodology within the 2001 Childcare Facility Guidelines and will also provide an additional element of additional childcare capacity over and above the likely demand from the proposed development.

Once operational, the proposed development will give rise to much needed additional residential accommodation. Residents will spend a portion of their income locally which would not happen without the proposed development. The proposed development provides for a childcare facility which is fully integrated with the design of the scheme. The proposed development will provide long term job opportunities for people living in the area, in addition to those construction and development jobs provided during the construction phase.

This planning application is accompanied by a Social and Community Infrastructure Audit / Assessment Report prepared by John Spain Associates, which confirms that the area within which the proposed development is situated has the necessary community and social infrastructure to support the proposal, as supplemented by the proposed community infrastructure and facilities included within the proposed development itself.

Having regard to the fact that the area within which the development is situated benefits from a good level of social and community infrastructure and noting the elements of the proposed development which will improve and strengthen this infrastructure, it is concluded that the proposed development will precipitate a moderate, positive, long term impact on social patterns in the operational phase.

3.5.8 Land-Use & Settlement Patterns

Construction Phase

The development works will be largely confined to the proposed development site and have the potential to impact adversely and result in the temporary degradation of the local visual environment on a short-term basis. The visual impacts are assessed in greater detail in Chapter 6 of this EIAR.

The construction phase of the proposed development will primarily consist of site clearing, excavation and construction works, and the erection of the proposed new buildings on site and has the potential to impact adversely and result in the temporary degradation of the local visual environment on a short-term basis. The visual impacts precipitated by the proposed development are assessed in greater detail in Chapter 6 of the EIAR 'Landscape and Visual Impacts'.

Secondary land use impacts include off-site quarry activity and appropriate disposal sites for removed spoil and other materials transported off site. The Resource and Waste Management Plan addresses these issues in more detail.

The construction phase may result in a marginally increased population in the wider area due to increased construction employment in the area, however, this would be temporary in nature and the impact would be imperceptible.

Operational Phase

The operational phase of the proposed development will result in the introduction of a greater intensity and density of residential development, delivering wider public realm improvements, in accordance with national and local planning policy objectives which seeks to deliver compact growth at suitable locations. Adequate provision of high-quality housing to serve the existing and future population of the county and the wider Dublin area is an important pre-requisite and contributor to the establishment and maintenance of good human / public health. The high quality design of the proposed development, including individual units which meet and exceed the relevant standards for apartments as set out within the Apartment Guidelines will contribute to a positive impact on the wellbeing of future residents.

The proposed development will respond to established housing need and demand in the area of the proposed development, and the wider region. The proposed residential units will assist in addressing the significant shortfall of residential development, which has been further impacted by the recent Covid 19 crisis and continued economic growth.

The proposed development delivers a range of housing unit sizes, including one-, two-, three- and four-bedroom apartments and houses. The scheme also benefits from a high level of good quality communal and public open space, with new linkages provided through the site improving connectivity.

The delivery of 344 no. well-designed residential units at an appropriate location will have a direct, positive, and significant impact on the future residents of the proposed development and will support the population growth targeted for the area, at a location which is designated for residential development.

3.5.9 Health & Safety

Construction Phase

The construction phase of the proposed development may give rise to short-term impacts associated with construction traffic, migration of surface contaminants, dust, noise and littering. Secondary impacts may include resulting increased traffic arising from hauling building materials to and from the proposed development site which are likely to affect population and human health distant from the proposed development site, including adjacent to aggregate sources and landfill sites.

Construction impacts are likely to be short term and are dealt with separately in the relevant chapters of this EIAR document and will be subject to control through a Construction and Environmental Management Plan, and a Resource and Waste Management Plan. The construction methods employed and the hours of work proposed will be designed to minimise potential impacts. The development will comply with all Health & Safety Regulations during the construction of the project. Where possible, potential risks will be omitted from the design so that the impact on the demolition and construction phase will be reduced.

Operational Phase

The operational stage of the development is unlikely to precipitate any significant impacts in terms of health and safety. The design of the proposed development has been formulated to provide for a safe environment for future residents and visitors alike. The paths, roadways and public areas have all been designed in accordance with best practice and the applicable guidelines including DMURS. A Quality Audit has been undertaken which has informed the design and which is submitted as part of the application. Likewise, the proposed residential units and childcare facility accord with the relevant guidelines and will meet all relevant safety and building

standards and regulations, ensuring a development which promotes a high standard of health and safety for all occupants and visitors.

The proposed development will not result in any significant impacts on human health and safety once completed and operational. The proposed development therefore is unlikely to result in negative impacts in relation to population and human health in this regard and the resulting impact will be negligible.

3.5.10 Risk of Major Accidents or Disasters

Construction Phase

Having regard to the topography, nature and location of the subject site, it is not considered likely that there will be any impact related to a major accident or disaster during the construction phase of the proposed development, stemming internally from within the development, or externally.

The works proposed in proximity to roadways will be governed by best practice and appropriate safety procedures, ameliorating any risk of a major accident in those contexts.

Operational Stage

The proposed development will be located on land which is not at any significant accident or disaster. The traffic arrangements and parking have been designed so as to avoid any risk of a major accident associated with the surrounding road network. For further details please refer to the Traffic and Transport Assessment and associated documentation prepared by DBFL.

The majority of the site is located within Flood Zone C and is appropriately sited and designed to minimise the risk of flood impacts on the development, as set out within the Site Specific Flood Risk Assessment Report prepared by McCloy. A portion of the site at the southern side is located within Flood Zone A and Flood Zone B, however, all residential development, the childcare facility and the proposed pumping station are located within Flood Zone C, whilst part of the access road, streets, parking and open space are located partly in Flood Zone's A and B. The proposed development is considered compliant with the Planning System and Flood Risk Management Guidelines, noting the development proposals for the site have been developed in accordance with the sequential approach to flood risk management to ensure that the proposed development is sited in appropriate flood zones, having regard to the classification of vulnerability of different land uses and types of development. The SSFRA report outlines there is no loss of floodplain and therefore compensatory measures are not required. The SSFRA demonstrates that subject to the proposed mitigation measures, the proposed development will not increase the risk of flood elsewhere, and that flood levels are reduced at a number of locations both on and off the site. As part of the SSFRA, the Justification Test (as set out in 'The Planning System and Flood Risk Management – Guidelines for Planning Authorities, 2009) has been applied. It is considered that the Justification Test for Development Management is passed.

It is considered that there is no significant risk related to major accidents or disasters, external or internal, man-made or natural in respect of the proposed development.

3.6 POTENTIAL CUMULATIVE IMPACTS

The potential cumulative impacts of the proposed development on population and human health have been considered in conjunction with the ongoing changes in the surrounding area.

The proposed development comprises a Strategic Housing Development of 344 no. residential units, a childcare facility, car and cycle parking, landscaping, public and communal open space, road upgrades and vehicular access and associated internal roads, pedestrian and cycle paths and all associated site and infrastructural works. The subject lands are within a Key Development Area 2 and are contained within the Celbridge Local

Area Plan 2017-2023. In each of the chapters, the impact of the proposed and future planned development will be considered also as other known 'committed developments' within the surrounding area.

The cumulative impact of the proposed development, along with other permitted, existing and proposed developments in the vicinity, will be a further increase in the population of the wider area. This will have a moderate impact on the population (human beings) in the area. This impact is likely to be long term and positive, having regard to the zoning objective for the subject lands, and their strategic location in close proximity to public transport, and the high level of demand for new housing in the area.

Cumulative impact on childcare demand is assessed in the Social & Community Infrastructure Audit / Assessment and demonstrates that the development does not result in a demand for childcare provision which could not be reasonably catered for in existing / planned childcare facilities within the area, in addition to the creche provided in the subject development (which has capacity to cater for the entire development proposed, with additional capacity in addition).

With regard to human health, the cumulative impact of the proposed development in conjunction with other nearby developments and the ongoing development on the subject site will provide for the introduction of high-quality new housing stock in the area with a high level of accessibility and amenity.

The overall cumulative impact of the proposed development will therefore be long term and positive with regard to human health for future residents of scheme who will benefit from a high quality, visually attractive living environment, with ample opportunity for active and passive recreation and strong links and pedestrian permeability, with a direct and convenient link to high frequency public transport modes. The impact on existing residents is considered to be neutral.

3.7 'DO NOTHING' IMPACT

In order to provide a qualitative and equitable assessment of the proposed development, this section considers the proposed development in the context of the likely impacts upon the receiving environment should the proposed development not take place.

A *'do nothing'* impact would result in the subject lands continuing to be used as greenfield lands. This could be considered an underutilisation of the site from a sustainable planning and development perspective, which supports increased residential densities at suitable locations within built up areas, particularly considering the proximity of the subject lands to public transport, both existing and planned, and Celbridge Town Centre. The status of the environmental receptors described throughout this EIAR document would be likely to remain unchanged. The potential for any likely and significant adverse environmental impacts arising from both the construction and operational phases of the proposed development would not arise.

However, similarly the potential for any likely and significant positive environmental impacts arising from both the construction and operational phases of the proposed development would also not arise.

A 'do nothing' scenario would involve the subject site, which is zoned for a mix of residential, education and community uses not providing a residential development and remaining underutilised. The local economy would not experience the direct and indirect positive effects of the development. Failure to deliver the proposed strategic housing development residential units would result in existing housing need and demand remaining unmet. The objectives of the Local Area Plan for this KDA would not be achieved, and the opportunity to provide residential units at an appropriate density in the area would be missed. This would represent a sub-optimal use of zoned and serviced land which is identified for development.

3.8 AVOIDANCE, REMEDIAL & MITIGATION MEASURES

Avoidance, remedial and mitigation measures describe any corrective or mitigative measures that are either practicable or reasonable, having regard to the potential likely and significant environmental impacts.

Construction Phase

A range of construction related remedial and mitigation measures are proposed throughout this EIAR document with reference to the various environmental topics examined and the inter-relationships between each topic. These remedial and mitigation measures are likely to result in any significant and likely adverse environmental impacts on population and human health during the construction phases being avoided. The following mitigation measures are intended to mitigate the identified potential impacts on population and human health, in addition to the specific mitigation provided in relation to other environmental topics within the other chapters of this EIAR.

P&HH CONST 1: Construction and Environmental Management Plan
It will be necessary for the appointed contractor to prepare and implement a construction and environment management plan (including traffic management) to reduce the impacts of the construction phase on local residents and ensure the local road network is not adversely affected during the course of the construction project. The measures incorporated into the Preliminary Construction and Environmental Management Plan and this EIAR will inform the CEMP, which can be agreed with the Planning Authority prior to commencement of development.

P&HH CONST 2: Resource and Waste Management Plan
The measures outlined within the Resource and Waste Management Plan submitted with the application will be carried out in full during the construction stage in accordance with the requirements of the Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects.

Operational Phase

The operation phase is considered to have likely positive impacts on human beings in relation to the provision of additional residential units in accordance with the principles of sustainable development and zoning objectives pertaining to the site, therefore no additional operational stage mitigation measures are proposed having regard to the mitigation measures within other chapters of this EIAR.

3.9 PREDICTED IMPACTS OF THE PROPOSED DEVELOPMENT

This section allows for a qualitative description of the resultant specific direct, indirect, secondary, cumulative, short, medium and long-term permanent, temporary, positive and negative effects as well as impact interactions which the proposed development may have, assuming all mitigation measures are fully and successfully applied. It should be noted that in addition to remedial and mitigation measures, impact avoidance measures have also been built into the EIAR and project design processes through the assessment of alternatives described in Chapter 2 of this EIAR document.

Construction Phase

The construction phase of the proposed development will result in the addition of a residential element, comprising of 344 no. residential units and associated facilities and amenities in the area. This will provide for a more sustainable use of the subject site and improve the residential offering in the locality, on an accessible site. Notwithstanding the implementation of remedial and mitigation measures there will be some minor temporary residual impacts on Population and Human Health most likely with respect to nuisance caused by construction activities. It is anticipated that subject to the careful implementation of the remedial and mitigation measures proposed throughout this EIAR document and as controlled through the Construction and Environmental Management Plan, any adverse likely and significant environmental impacts will be avoided.

Positive impacts are likely to arise out of an increase in economic activity. The overall predicted likely and significant impact of the construction phase will be short-term, temporary and is likely to be neutral.

Operational Phase

The proposed development will result in a generally positive alteration to the existing site in terms of urban design, architecture, economic activity and provision of residential accommodation in accordance with adopted land use planning policy.

The proposed development will result in a positive alteration to the existing underutilised site in terms of the provision of residential units, a childcare facility, open space and roads infrastructure to serve the growing population of the area in accordance with national and regional planning policy.

Positive impacts on population and human health will include health benefits associated with the provision of a significant number of modern, well-designed and sustainable residential units, a high-quality environment, public open space and improvements to the public realm which creates a highly permeable layout that encourages walking and cycling, amenity and recreational facilities.

The implementation of the range of remedial and mitigation measures included throughout this EIAR document are likely to have the impact of limiting any adverse significant and likely environmental impacts of the operational phase of the proposed development on Population and Human Health.

The proposed development will provide for a high standard of residential accommodation. This will be a significant residual positive impact of the proposed development.

3.10 MONITORING

This section addresses the effects that require monitoring, along with the methods and the agencies that are responsible for such monitoring.

In relation to the impact of the development on population and human health it is considered that the monitoring measures outlined in regard to the other environmental topics such as water, land and soils and noise and vibration sufficiently address monitoring requirements.

3.11 REINSTATEMENT

It is anticipated that the proposed development will realise significant positive long term overall economic and social benefits for the local community and the wider area. The proposed development will increase the population in the study area. This is considered a positive impact having regard to the New Residential and Community and Educational zoning, and proximity to public transport and Celbridge Town Centre.

Strict adherence to the mitigation measures recommended in this EIAR will ensure that there will be no negative residual impacts or effects on Population and Human Health from the construction and operation of the proposed scheme. Indeed, the delivery of additional residential development will provide a significant positive long-term impact for the local area. No additional reinstatement measures are considered necessary in respect of population and human health.

3.12 INTERACTIONS

As referenced throughout the chapter, there are numerous inter-related environmental topics described in detail throughout this EIAR document which are of relevance to human health. This chapter of the EIAR has been instructed by updated guidance documents reflecting the changes within the 2014 EIA Directive. These

documents include the EU and Irish guidelines for preparation of an EIAR and carrying out an EIA. Therefore, in line with the guidance documents referred to, this chapter of the EIAR focuses primarily on the potential likely and significant impact on Population and Human Health in relation to health effects/issues and environmental hazards from the other environmental factors and interactions that potentially may occur.

Where there are identified associated and inter-related potential likely and significant impacts which are more comprehensively addressed elsewhere in this EIAR document, these are referred to. However, the relevant environmental topic chapter of this EIAR document contains a more detailed assessment in respect of the interaction of each environmental topic with population and human health.

3.13 DIFFICULTIES ENCOUNTERED IN COMPILING

No significant difficulties were experienced in compiling this Chapter of this EIAR document.

3.14 CONCLUSION

This chapter of the EIAR has provided an assessment of the likely impact of the proposed development on population and human health. As set out above, the proposed development will result in a positive impact on housing and is not likely to result in any significant adverse effects on population and human health, and will result in some other positive impacts, including settlement patterns of a sustainable density at an appropriate location and economic benefits derived from the employment opportunities within the childcare facility proposed. Through generating additional economic activity in the area and providing for a high standard of residential accommodation, there will be a significant positive impact arising from the proposed development.

3.15 REFERENCES

- National Planning Framework 2018
- Regional Spatial and Economic Strategy for the EMRA, 2019
- Kildare County Development Plan 2017-2023
- Celbridge Local Area Plan 2017-2023
- 2021 Labour Force Survey Q4 – www.cso.ie
- 2020 Labour Force Survey Q4 – www.cso.ie
- 2019 Labour Force Survey Q4 – www.cso.ie
- IEMA Health in Environmental Impact Assessment A Primer for a Proportionate Approach document (2017) https://www.researchgate.net/publication/316968065_Health_in_Environmental_Impact_Assessment_a_primer_for_a_proportionate_approach
- ESRI Quarterly Economic Commentary, Winter 2021 – www.ESRI.ie
- ESRI Quarterly Economic Commentary, Spring 2022 – www.ESRI.ie
- Central Statistics Office www.cso.ie
- AIRO Maps – 2016 Census