

5 Population & Human Health

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5.1 Introduction

This chapter of the EIAR has been prepared by Brock McClure Planning and Development Consultants.

This chapter will address the potential impacts of the proposed residential development for lands (c.1.8ha) adjacent to 'The Grange', Brewery Road, Stillorgan, Blackrock, Co. Dublin on population and human health.

Potential impacts of this proposal on population and human health arise in the context of land and soil, water, air and climate, material assets, cultural heritage and landscape and visual assessment. These aspects are dealt with in the specific chapters in this EIAR dedicated to those topics.

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.

As referenced in the Department of Housing, Planning and Local Government (2018) *Guidelines for Planning Authorities and An Bord Pleanála*, (taken from the European Commission's Environmental Impact Assessment of Projects: Guidance on the Preparation of the Environmental Impact Assessment Report (2017)), 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.”

The Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports - Draft (2017) advise that “in an EIAR, the assessment of impacts on population and human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in this EIAR e.g. under the environmental factors of air, water, soil etc.”

5.2 Study Methodology

This chapter of the EIAR document has been prepared with reference to guidance provided by the EU Commission and 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 Draft Guidelines on the information to be contained in environmental impact assessment reports, published by the EPA in August 2017.

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 significant potential impact upon human receptors. A desk-based study of the following documents was carried out to inform this chapter:

- Central Statistics Office www.cso.ie.
- Central Statistics Office (2016) – Census 2016
- Central Statistics Office (2018) – CSO Statbank
- DoHPLG (2017) Rebuilding Ireland – Action Plan for Housing and Homelessness
- Dun Laoghaire Rathdown County Development Plan 2016-2022.

- ESRI Quarterly Economic Commentary (June 2019)
- Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment (European Union, 2017)
- Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment (European Union, 2017)
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, Draft August 2017)
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2002)

This chapter of the EIAR document focuses primarily on the potential likely and significant impact on Population, which includes Human Beings as required under the Schedule 6 of the Regulations, 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.

5.3 The Existing Receiving Environment (Baseline)

The following provides a description of the receiving environment, with a focus on population, land use, housing, employment and local amenity.

An outline of the likely evolution without implementation of the project as regards to natural changes from the baseline scenario is also provided. A number of key factors of the existing environment are considered in this section under the following sections:

Key Factors

- Population Trends
- Population Profile
- Land Use
- Housing
- Employment
- Commuter Factors
- Economy
- Social Service Provision
- Childcare Audit

In order to assess the likely significant impacts of the proposed development on population and human health, an analysis of the Census data was undertaken. The data relating the Stillorgan-Leopardstown Electoral District was examined. The analysis focused on the economic, demographic and social characteristics of the Electoral District.

Population Trends

The electoral division of Stillorgan-Leopardstown is outlined in blue in the map below, with the site indicated with a yellow star. The total population of the electoral district in 2016 was 2,714. This represents a population increase of 10.6% (289) from the 2011 Census figure.

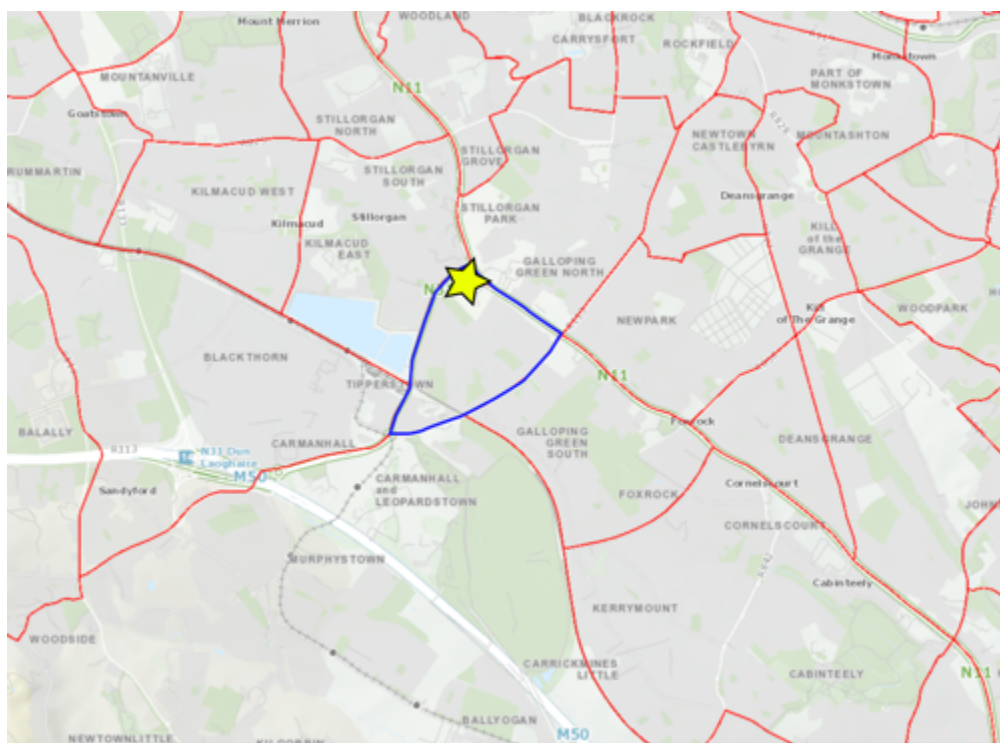


Figure 5.1 - Map show Electoral Divisions with the subject site indicated with a star

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. This is attributable to the slower economic activity in the early part of the census period resulting in a reduced level of immigration, albeit offset to a degree by strong natural increase. The economy has recovered in recent years with consequent population growth predominantly attributed to natural increase, greater economic activity, increased job opportunities and continued immigration.

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
Dun Laoghaire Rathdown	206,261	218,018	5.7
Electoral Division of Stillorgan - Leopardstown	2,429	2,714	10.6

Table 5.1 - Population change in the State, Dublin County, and Stillorgan- Leopardstown ED 2011-2016 (Source: CSO)

Notably, the population of the Stillorgan-Leopardstown electoral division increased at a significantly greater rate than the State as a whole, Dublin County or Dun Laoghaire Rathdown County over the 2011-2016 intercensal period. This can be attributed to continued residential development in the area. The substantial growth in the area is also likely to be attributable to the availability and provision of physical and social infrastructure, including the Luas, and the associated significant level of residential development that has progressed in this area in recent years.

The subject site is thus within an area undergoing significant change and this is consistent with its location adjacent to the town centre and with a range of public transport options available.

Population Profile

Approximately 64% of the population of Stillorgan-Leopardstown was of working age (19-64) as the time of the 2016 Census, which is slightly higher than the c. 60% recorded for the State and county.

In 2016 there were 1,313 (48%) males and 1,401 (52%) females within the study area (2,714 altogether). The largest cohort for both males (157) and females (175) is within the 30-34-year-old category. Categorising 15 years and younger as 'youth' yields a population of 444 or approximately 16% of the total population. The total number of people aged 65 or older is 470, this equates to 17% of the total population.

The dependency ratio for the area (ie those not in the workforce – aged 0-18 or over 65) is lower than the county and national figures at 36% of the population.

Age of Cohort	% Population in each Age Cohort by Area					
	State		DLRC		Stillorgan-Leopardstown	
0-4 years	331,515	7%	13,810	6%	162	6%
5-12 years	548,693	12%	21,302	10%	220	8%
13-18 years	371,588	8%	15,651	7%	123	5%
19-24 years	276,856	7%	19,088	9%	191	7%
25-44 years	1,406,291	30%	61,495	28%	992	37%
45-64 years	1,135,003	24%	52,003	24%	556	21%
65-69 years	221,236	4%	9,765	5%	154	6%
70 years and over	426,331	9%	24,904	11%	316	12%
Dependency Ratio		39.7%		39.2%		35.90%

Table 5.1 - Percentage in each Age Cohort by Area (Source: CSO)

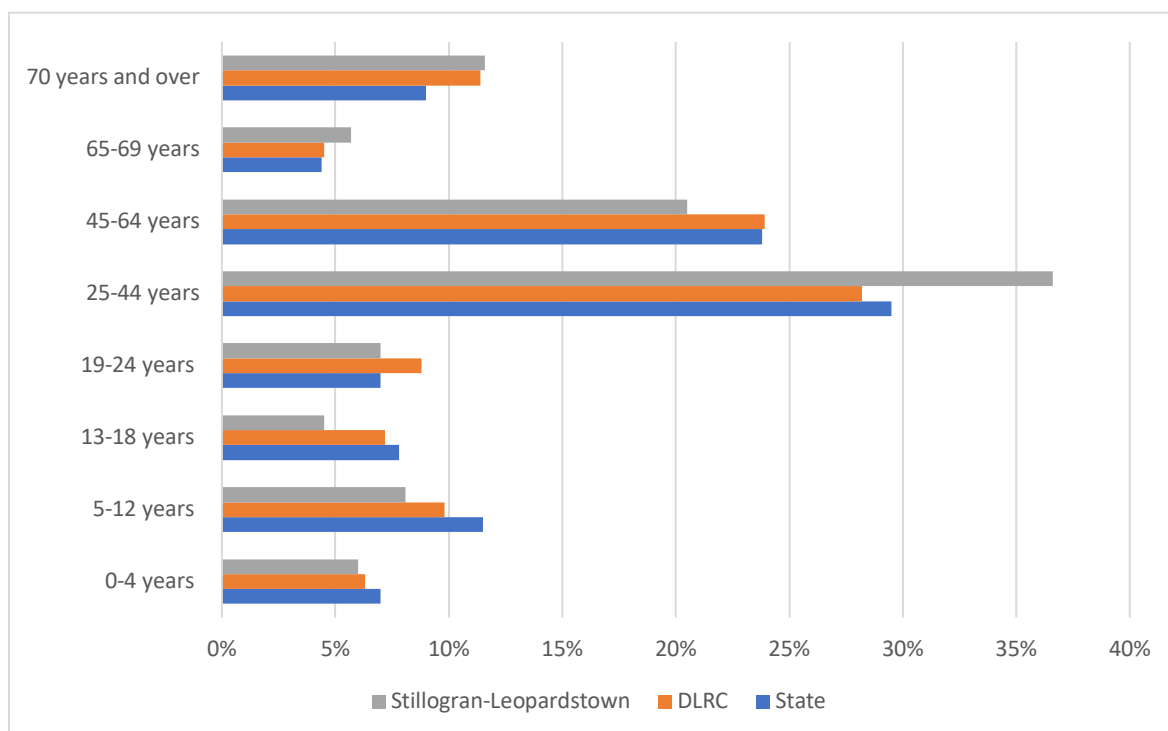


Figure 5.2 - Percentage in each Age Cohort by Area (Source: CSO)

Land Use

The site is located in Stillorgan which is an area that can be characterised as a well-planned and settled mature residential area. The area which was formerly a village, is now a suburban area of Dublin. Stillorgan is located within the Dun Laoghaire Rathdown county boundaries and contains many housing developments, shops and other facilities, with the old village centre still present.



Figure 5.3 - Zoning

The subject site is primarily zoned 'A' - *"To Protect and/or improve residential amenity"*.

A small portion of the site is zoned 'F'. This has the objective 'to preserve and provide for open space with ancillary active recreational amenities'.



Figure 5.4 - Land uses in the surrounding area

Regarding the land uses in the surrounding area, it is clear from the above context map that residential use is the most prominent type of land use with some patches of open space and a small number of

commercial units to be seen. The site fronts onto the N11 which has been identified as a key transportation corridor in the Dun Laoghaire Rathdown Development Plan 2016- 2022.

- The subject site is ideally located just a short drive from Dublin City Centre, off the N11 route.
- The area is serviced by numerous bus routes, including the 84, 75 and 46A-46E routes and benefits in terms of travel time from the Quality Bus Corridor (QBC).
- The Sandyford Luas stop is within walking distance.
- The Grange benefits from the Stillorgan Road and Brewery Road Cycle Way, which passes alongside the development. The site is within easy reach of Foxrock, Blackrock Village, Dundrum, Donnybrook, Stillorgan, Ballsbridge, Ranelagh & the city centre.
- The M50 Motorway (Sandyford/Junction13) is located approx. 1.7km southwest of The Grange and offers convenient access to Dublin Airport and nationwide network of roads which feeds off the M50.

Housing

The subject site is located within the county boundaries of Dun Laoghaire Rathdown. The Dun Laoghaire Rathdown Development Plan 2016-2022 outlines that in relation to housing, its core strategy has been formulated from the available population and household target projections.

Table 1.2.1: RPG Targets			
	2006	2016	2022
DLR (population)	194,038	222,800	240,338
DLR (housing)	77,508	98,023	117,893

Table 5.2 - RPG Targets: Source: CSO

The Government's *Rebuilding Ireland - Action Plan for Housing and Homelessness* set a target to construct 25,000 homes annually to 2021. According to the CSO Q3 of New Dwelling Completions Report, 18,072 new dwellings were completed in 2018. This is almost 7,000 dwellings below Rebuilding Ireland's annual target. Using the Eircode Routing Key, the CSO reports that 369 no. of these completions are recorded in Dublin 18.

According to the Department of Housing, Planning and Local Government, Homelessness Report (2018), Among the 4,175 adults in emergency accommodation in December 2018, 1,764 were adults accompanied by child dependents.

Employment

Within the electoral division of Stillorgan- Leopardstown, of a total 1,739 people eligible for work, 1,322 (64%) people were recorded as being within employment in the Census 2016. The industries people are working in are illustrated on the Figure below. Commerce and Trade represents the largest sector, followed by Professional Services.

Table 4 shows the number of people within Stillorgan-Leopardstown working in various occupations. The most common occupation for both male and female is a 'Professional Occupation'. In regard to employment sectors, the most prominent sector within the Electoral Division is 'Commerce and Trade', as illustrated in figure 5.

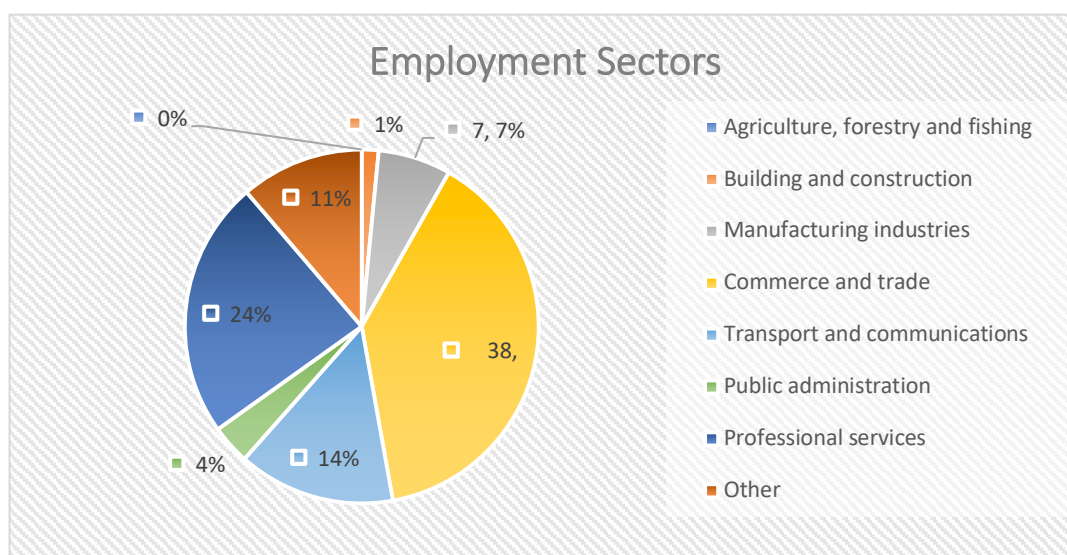


Figure 5.5 - Employment Sector (Created by Author)

Occupation	Male	Female	Total
Managers, Directors and Senior Officials	138	65	203
Professional Occupations	272	250	522
Associate Professional and Technical Occupations	162	120	282
Administrative and Secretarial Occupations	46	112	158
Skilled Trades Occupations	27	3	30
Caring, Leisure and Other Service Occupations	8	37	45
Sales and Customer Service Occupations	21	28	49
Process, Plant and Machine Operatives	11	4	15
Elementary Occupations	17	19	36
Not stated	26	32	58
Total	728	670	1,398

Table 5.3 - Occupations (Source: CSO)

The unemployment rate as of December 2018 stood at 5.5% of the population. The unemployment rate was at 4.6% in July 2019. According to the Economic and Social Research Institute's (ESRI) Quarterly Economic Commentary Summer 2019, the unemployment rate has fallen below 5 per cent for the first time since 2007 and we expect it will continue to drop into 2020. Albeit, this forecasts is subject to the assumption that the United Kingdom remains in the European Union.

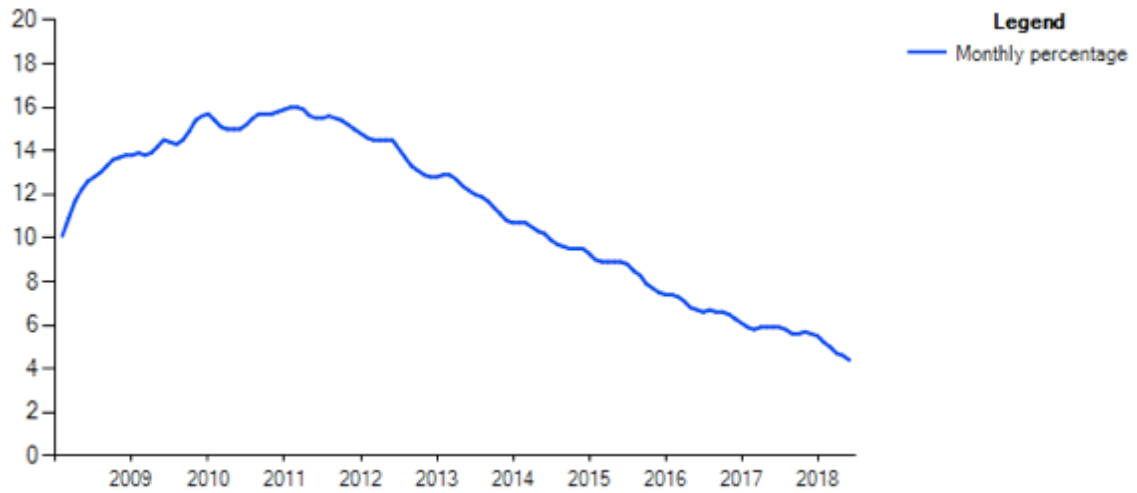


Figure 5.6 - Yearly national unemployment rates. Source: CSO

The proposed development will generate economic activity in the locality during the construction period. It is anticipated that permanent crèche staff positions, permanent apartment building management jobs and other associated jobs will be generated, with spin-off economic activity created for local retail and service providers 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 phased construction period.

The construction phase of the project may have some short-term negative impacts on local businesses/residents during the construction phase. Such impacts are likely to be associated with construction traffic and possible nuisances associated with construction activity. Such impacts will be short term and in the longer term, the completed scheme will have long-term beneficial impacts for local businesses, residents and the wider community. The construction methods employed and the hours of construction proposed will be designed to minimise potential impacts.

Commuter Factors

In 2016 there were 1,795 commuters who lived in the Electoral Division of Stillorgan-Leopardstown (total resident population of 2,714). There were also 1,071 commuters who lived in the Electoral Division of Stillorgan-Leopardstown but worked elsewhere. There were 438 commuters who travelled in to this electoral division to work. This resulted in a net flow of -633 commuters.

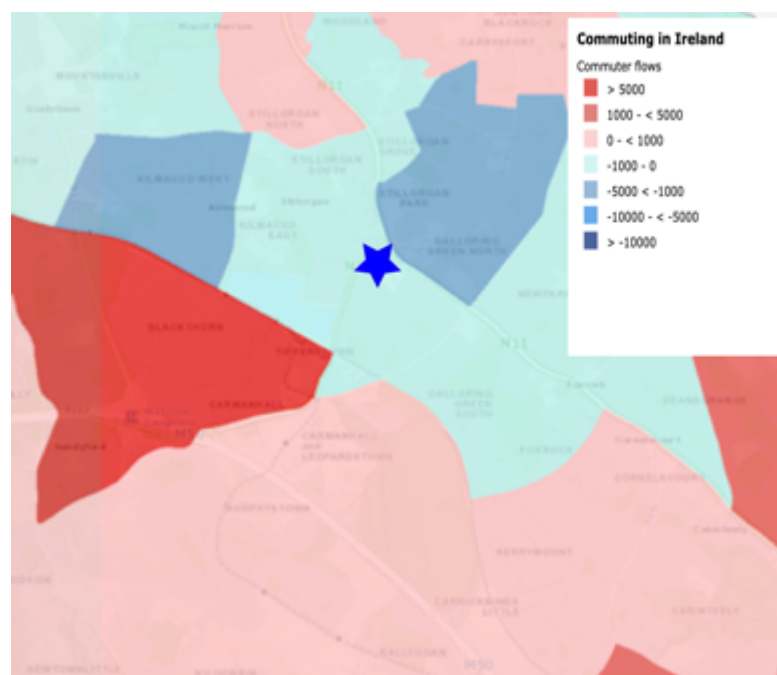


Figure 5.7 - Extract of Map 4.1, Census 2016 Profile 6 – Commuting in Ireland, showing Stillorgan Electoral Division shown as a Net Recipient of Daily Commuters (Source CSO: Census 2016).

Economy

The Irish economy experienced an unprecedented period of growth from the early 1990's to 2007. According to the Economic and Social Research Institute (ESRI), the unprecedented economic growth saw the level of Irish real GDP double in size over only slightly more than a decade.

However, the pace of economic growth began to decelerate in the second half of 2007. In 2008, output fell for the first time since 1983, and the recession deepened in 2009. Ireland's economic difficulties were compounded by the global difficulties in financial markets which commenced in 2007.

The decline in economic growth was accompanied by a major decline in employment figures. From a peak rate of 2.1 million persons employed in 2007, an increase of 75% from 1990 and averaging a low unemployment rate of 5% in 2007. At its highest, unemployment was recorded at 15.1 % in December of both 2010 and 2011.

The Economic and Social Research Institute's (ESRI) Quarterly Economic Commentary Summer 2019 notes that 'notwithstanding the observed slowdown in international macroeconomic conditions, the Irish economy continues to experience robust economic growth in 2019' (ESRI, 2019). The report further states that heightened uncertainty, however, is still very much a feature of present economic conditions due to the ongoing issue of Brexit and the potential nature of the UK's exit from the European Union. Uncertainty from international sources is also highly relevant in terms of investment decisions made domestically.

Social Service Provision

Stillorgan has a wide range of health care facilities, childcare facilities and educational facilities. There are also number of community facilities including parks, playgrounds and libraries. They also facilitate many services for the community including, sports club, hobbies & activity centres and leisure centres.



Figure 5.8 - Social Services Provision

Childcare Facilities Audit

While this proposal is providing a childcare facility, a childcare facilities audit was carried out in July 2019 as part of this application to determine the capacity of existing childcare operators in the area. . We note that 11 no. existing facilities were identified within a 2km radius.

Child Care	Max. Capacity Figure	Available Capacity
Giraffe Childcare Central Park	74	0
Glenalbyn Montessori School	Not Available	=
Kumon Maths & English	Not Available	-
Busy Bees Childcare Ltd	80	0
Narnia Nursery School	64	0
Park Academy Childcare Beacon Court Sandyford	144	15
Park Academy Childcare Beacon South Quarter	85	20
Lakelands Childcare	38	0
Cocos Creche	45	0
Willow House Childcare	43	0
Little Dale Academy	83	0
Total	613	35

Table 5.4 - Childcare Facilities (Source: Assessment by Author)

The childcare audit demonstrates that there is a limited number of childcare places remaining for future children. The demand generated by the existing development in site in combination with phase

1 and phase 2 equate to 82 childcare places. It was therefore decided to provide a childcare facility that would cater for the generated demand of this proposal and future populations.

The proposed creche facility of 658sq m will provide for 115 spaces within the development, which will be sufficient to cater for all 82 estimated new spaces needed.

Schools Capacity

It has been established that 17.48% of the existing population is of the average school going age (4-19 years of age). This equates to 135 persons of the 772 person population envisioned for the site.

The assumption is made in “The Provision of Schools and the Planning System”, that primary school demand can be assessed based on a rate of 12% of the school going age. The remaining 5.48% can be assumed to be post primary demand.

Based on the figures provided for Phase 1 (772 person population), we can estimate that the demand for primary school places would equate to c.93 no. pupils (12% of the total population) and the demand for post primary school places to 42 no. pupils (5.48% of the total population).

A schools capacity assessment of primary and secondary schools within a 5km radius was carried out in July of this year. The total estimated available capacity in existing primary schools as **929 no. pupil spaces**. It is submitted that there exists sufficient capacity in the surrounding area to cater for the primary school needs arising from the proposed development of 287 no. residential units and a future phase 2 development. Any further uplift on figures for Phase 2 will also be easily accommodated. The locations of these schools are shown in the diagram below:

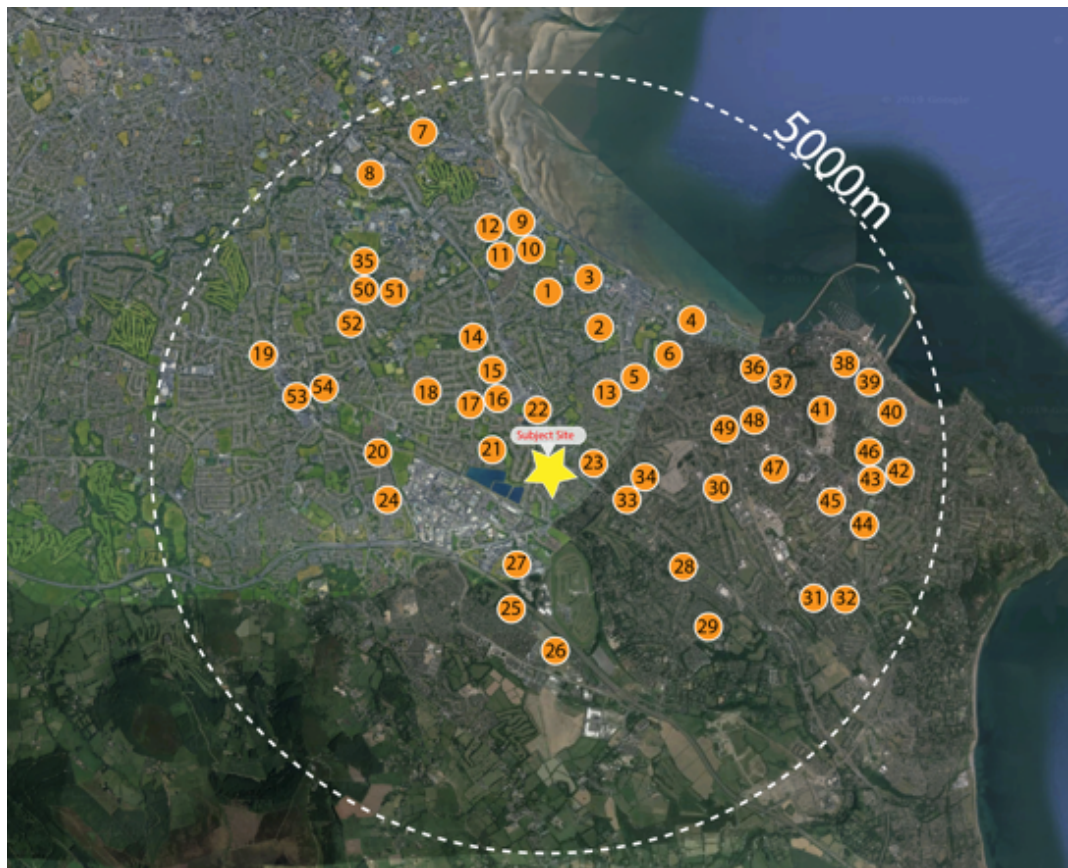


Figure 5.9 – Primary Schools within 5000m of the site

The total estimated available capacity of post primary schools examined within this assessment equates to **817 no. places**. It is submitted that this is sufficient to cater for the **42 no. demand places**

arising from the proposal and the 71 no. demand places arising from Phase 2 of the proposal. The locations of these schools are shown in the diagram below:



Figure 5.10 – Post Primary Schools within 5000m of the site

5.4 Characteristics of Potential Impacts

This section provides a description of the specific, direct and indirect, impacts that the proposed development may have in a ‘do nothing scenario’, and during both the construction and operational phases of the proposed development. As stated, guidance documents from the EPA and the Department outline that the assessment of impacts on population and human health should focus on health issues and environmental hazards arising from the other environmental factors, and does not require a wider consideration of human health effects which do not relate to the factors identified in the EIA Directive.

In relation to the extent of the impact of the proposed development during the construction phase, the vast majority of impacts are local (with no transfrontier impact), are acceptable in terms of the magnitude of impact and are temporary, as they will last only for the period of construction.

The potential impacts arising during the construction phase are not complex and can be addressed by good construction practice that includes, in particular, the mitigation measures set out in the Construction Management Plan.

Consideration is given to the likely impacts of the development on the factors outlined above in Section 5.3. This consideration focuses on the overall impact if the development were not to proceed; and the impact of the development on each of the above factors at the construction, and operational phases of the development, respectively.

Due to the size of the development, the overall construction phase of the development will last approximately 24 months from the date of commencement.

5.4.1 Impacts on Population Profile

Do Nothing Scenario

Were the development to not proceed, the present state of the subject site would remain. The subject site has been zoned to fulfil a specific housing need by 2023. As such, a do-nothing scenario would mean that this objective of the Development Plan would not be met, and some 287 no. households would remain uncatered for.

As such, the impact of the development not proceeding on population profile and trends in the area would be negative.

Furthermore, the positive nature of the development in terms of its location within a centre of employment, and therefore the associated increase in sustainable commuter trips in the area, would be lost.

Construction Phase

During the construction phase of the development there will be a neutral impact on the population trends and profile for the area as no additional persons will be housed on site.

Operational Phase

The proposed development will consist of 287 no. residential units/households. Using the local average household size indicators from Census 2016 for surrounding electoral divisions (2.69), this may result in a projected population of approximately 772 no. persons. Using the average household figures for the state (2.75), this may result in a projected population of approximately 789 no persons. In terms of analysis for EIAR purposes, the larger population figure is used to assess impact. This will result in a sizeable addition to the emerging Stillorgan-Leopardstown district. This is considered significant and positive, particularly in the context of current housing demand, while also taking account of the location's access to places of employment.

5.4.2 Impacts on Housing

Do Nothing Scenario

There are currently no persons residing on the subject site, which is currently mostly greenfield. The site was previously the subject of a development proposal that has not been completed. In its current situation, the subject site is an eyesore and detracts from the aesthetic and amenity of the area. Were the development not to proceed, this scenario would continue and the site would remain in its current state. As a result, this residentially zoned land would not contribute to the housing unit targets set out in the *Dún Laoghaire – Rathdown County Development Plan 2016-2022*. It would also continue to significantly detract from the amenity of the area. The impact of a do-nothing scenario would therefore be negative in terms of local residential amenity and in terms of meeting targets for household growth.

Construction Phase

The construction phase of the development is not anticipated to provide any impact on the quantum of or access to housing in the area. The residential amenity of the area will be unavoidably affected during the construction phase due to the works taking place. This impact is not considered to be significant however.

Operational Phase

The proposed development will result in the addition of 287 no. units to the supply of housing in the Stillorgan-Leopardstown area. These will be a mixture of studios, 1, and 2 residential units.

The addition of these proposed units will contribute to the housing unit target outlined in the *Dún Laoghaire-Rathdown County Development Plan 2016 - 2022*, which states that a net requirement of approximately 30,800 no. new units are required over the lifetime of the plan. This equates to an average requirement of approximately 3,080 no. new residential units per annum to 2022.

5.4.3 Impacts on Land Use

Do Nothing Scenario

If the proposed development does not go ahead, it is likely that the subject site would remain vacant in the short to medium term. The subject site is a significant landbank at a strategic location and left undeveloped for any significant period it would likely go into decline. Vacant sites can have adverse effects on the character of an area by means of urban blight and decay. Vacant sites often attract anti-social behavior which can have a negative effect on the local population.

Construction Phase

The proposed development complies with the statutory land-use zoning for the site. The development of the subject site is in accordance with the objective to achieve compact growth contained with the National Planning Framework and will realise the efficient use of currently-underutilised brownfield land and higher housing density that is well served by public transport.

In light of national policy, it is likely that that the impact of this development would have a significant positive effect that will achieve local and wider county, regional and national objectives.

Operational Phase

The proposed development will deliver 287 no. residential units of which 29 no. will be for the purposes of Part V, social housing.

In light of the existing housing crisis, it is considered that a high-density development at this location would result in a likely significant positive impact as it would realise the objective of compact urban growth through the efficient and effective use of zoned and services landbank to provide much needed housing for future populations.

5.4.4 Impacts on Employment

Do Nothing Scenario

As the subject site is a greenfield site, the current levels of employment required to maintain the site (security personnel and occasional maintenance) would remain steady and the subsequent impact on employment would be neutral.

Construction Phase

The construction phase will provide employment for a large workforce at various stages during the life of the 24 month project. These construction workers will likely be recruited from Dublin and the wider metropolitan area. The multiplier effect arising from these additional construction jobs will also lead to an increase in employment in local businesses providing services to construction workers. As a result, the project will have a positive impact on employment numbers in the area during the construction phase.

Operational Phase

The proposed development will provide housing for a potential number of approximately 289 no. persons, when using average household figures for the State. Given the multitude of large

employment centres within close proximity to the site, the existence of significant transport infrastructure providing access to other centres it is likely that future residents of the scheme would work within close proximity to nearby employment centres. The multiplier effect arising from these additional residents using local services and purchasing goods at local businesses will also lead to an increase in employment in those businesses, which meet this demand.

5.4.5 Impacts on Traffic and Transport

Do Nothing Scenario

If the development did not proceed, there would be no impact on commuting patterns in the area as the proposed development does not provide any additional transport infrastructure services.

Construction Phase

During the construction phase the site will be accessed via Brewery Road. An Outline Construction Management Plan is required in accordance with the *County Development Plan 2016-2022*. The Plan includes a section which covers the Preliminary Traffic Management Plan. Further information on this is outlined in Chapter 13 of this EIAR – *Material Assets, Traffic and Transportation*.

Operational Phase

An Bord Pleanála will note from a review of the Traffic Assessment submitted by Waterman Moylan Consulting Engineers that traffic generated by the proposed development will be relatively low and is not expected to result in a significant impact. We note specifically the following summary from Section 8 (page 29) of the Traffic Transport Assessment:

- “A traffic survey was carried out by ‘Nationwide Data Collection’ on:
 - Site 01: N11 Stillorgan Road/N31 Brewery Road/Farmleigh Ave (Signalised Junction);
 - Site 02: N31 Brewery Road/St. Brigid’s Church Road (3-arm Priority Junction) and
 - Site 03: N31 Brewery Road/Site Access (3-arm Priority Junction).
- The volume of traffic expected to be generated by the proposed development has been derived using the trip rates from TRICS database.
- The vehicular trips generated by the proposed development will be 58 arrivals and 72 departures in the AM Peak, and 63 arrivals and 67 departures for the PM Peak.
- The extent of traffic impact from the two proposed residential development has been determined by checking where generated traffic would exceed 10% of traffic flow on the adjoining road or 5% on the adjoining road where congestion exists, or the location is sensitive. Junctions 1 and 2 results indicate that they will not need further assessment.
- Junction 3 has been modelled utilising its current configuration of a priority junction and the results indicate that the junction will operate within capacity during the 2038 plus development scenario with the highest Ratio of Flow to Capacity (RFC) at 0.50 and a corresponding queue of 1.0 vehicles during the morning and 0.29 of RFC and a corresponding queue of 1.4 vehicles during the PM.”

5.4.6 Impacts on Social Service Provision

Do Nothing Scenario

If the proposed development did not proceed, there would be no impact on social services provision.

Construction Phase

Not applicable.

Operational Phase

As stated above, it has been established that 17.48% of the existing population is of the average school going age (4-19 years of age). This equates to 135 persons of the 772 person population envisioned for the site.

Based on the figures provided for Phase 1 (772 person population), we can estimate that the demand for primary school places would equate to c.93 no. pupils (12% of the total population) and the demand for post primary school places to 42 no. pupils (5.48% of the total population).

It is submitted that this demand can be absorbed by the current schools capacity of the area and no further educational provision will be required in the context of this proposal. .

5.5 Human Health – The Potential Impacts

5.5.1 Lands & Soils

The following were concluded by Waterman Moylan Chapter 7 of this EIAR.

Construction Stage

A potential risk to human health due to the associated works during construction is the direct contact, ingestion or inhalation of receptors (i.e. construction workers) with any soils which may potentially contain low level hydrocarbon concentrations from site activities (potential minor leaks, oils and paint).

Operational Stage

No human health risks associated with long term exposure to contaminants (via. direct contact, ingestion or inhalation) resulting from the proposed development are anticipated.

5.5.2 Water

The following were concluded by Waterman Moylan Chapter 8 of this EIAR.

Construction Stage

There is a risk to Human Health should the ground water or the existing water supply become contaminated during the construction or operational stages, and the water is consumed. In order to mitigate these risks the measures outlined below will be adopted.

Operational Stage

There is a risk to Human Health should the ground water or the existing water supply become contaminated during the construction or operational stages, and the water is consumed. In order to mitigate these risks the measures outlined below will be adopted.

5.5.3 Noise and Vibration

The following were concluded by AWN in Chapter 9 of this EIAR.

Construction Stage

Construction phase noise and vibration emissions will be temporary and transient and will be managed so as to minimise impact to population and human health by complying with all relevant guidance, as such the impact will be short-term and have a slight impact overall.

Operational Stage

Operational phase noise will also be managed to achieve relevant noise limit values and is predicted to meet all such requirements. No operational phase vibration impacts are predicted. Therefore, the operational phase noise impacts will be neutral for the life of the development.

5.5.4 Air and Climatic Factors

The following points were concluded by AWN Consulting Ltd in Chapter 10 of this EIAR.

Construction Stage

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 short-term and imperceptible with respect to human health

Operational Stage

Impacts to air quality and climate are predicted to be imperceptible during the operational phase of the proposed development.

5.5.5 Landscape and Visual

The following points were concluded by ARC Architectural Consultants in Chapter 12 of this EIAR:

Construction Stage

During the construction phase, the visual impacts on the landscape will be of short-term duration.

Operational Stage

During the operational phase, the development will alter the landscape to some extent and the Visual Impact Assessment prepared by ARC Architectural Consultants notes the following points:

Overview of Visual Impact on the Built Environment:

“While a prominent site surrounded by development sensitive to visual change (i.e. buildings in residential use), the capacity of the application site to absorb the impacts of buildings higher than that of the surrounding low density residential estates is considerable given the character of the lands at The Grange and, indeed, the opposing site at Beechwood Court, as a cluster of taller and higher density buildings. The impact of the proposed development on the visual environment is likely to be largely restricted to the local area surrounding the application site, from elevated locations, across open foregrounds or at the ends of streets aligned towards the application site. Where streets or urban spaces are aligned towards the site, and where the buildings at the end of these alignments are relatively modest in height, there is a potential for taller elements of the development to be visible above lower intervening buildings. This potential increases with the length of the alignment but reduces with distance from the site. It follows, that for tall structures to be openly visible in a built up area, they must be seen across an open foreground or at the end of a long vista or alignment. Where visible, the impact of the proposed development is predicted to be consistent with emerging trends for development on the application site and along the N11 National Primary Route, particularly given that the site already accommodates a ten storey structure (page 13)”

Mitigation Measures:

“The subject application proposes the development of lands on and immediately adjoining a substantial and strategically located infill site, which was the subject of major re-development in order to accommodate medium and high density residential development in recent years. In these circumstances, during the construction or operational phases scope for mitigation measures, scope for mitigation measures, which would preserve a sustainable level of density, is limited (page 21).”

5.5.6 Traffic and Transport

The following points were concluded by Waterman Moylan Chapter 13 of this EIAR.:

Construction Stage

A number of temporary risks to human health may occur during construction phase related to noise, dust, air quality and visual impacts which are addressed in other sections of this EIAR.

Operational Stage

There will be a slight increase in traffic on the local road network.

5.5.7 Material Assets – Utilities

The following points were concluded by Waterman Moylan Chapter 14 of this EIAR.:

Construction

There are potential implications for the local populations if there are disruption to utility services during the connection of the new services to the proposed development. disrupt the existing services.

Operational Stage

Not applicable.

5.5.8 Material Assets – Waste Management

Construction

The potential impacts on human beings in relation to the generation of waste during the construction and operational phases are that incorrect management of waste could result in littering which could cause a nuisance to the public and attract vermin. A carefully planned approach to waste management and adherence to the project specific C&DWMP and OWMP, will ensure appropriate management of waste and avoid any negative impacts on the local population. The predicted effect of the generation of waste during the construction and operational phases on human health will be **long-term, imperceptible and neutral**.

Operational Stage

The potential impacts on human beings in relation to the generation of waste during the construction and operational phases are that incorrect management of waste could result in littering which could cause a nuisance to the public and attract vermin. A carefully planned approach to waste management and adherence to the project specific C&DWMP and OWMP, will ensure appropriate management of waste and avoid any negative impacts on the local population. The predicted effect of the generation of waste during the construction and operational phases on human health will be **long-term, imperceptible and neutral**.

5.5.9 Daylight and Sunlight

Construction

Not applicable.

Operational Stage

As is always the case where a development will result in a change to the sunlight and daylight environment of an area, the impacts of the development on sunlight access will result in interactions with climate, population and human health and the landscape.

5.2 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 cumulative impact of the proposed development will be a further increase in the population of the wider area. The previously vacant lands will provide for 287 no. new 1 and 2 bed residential units. This will have a moderate impact on the population (human beings) in the area. This impact is likely to be long term and is considered to be positive, having regard to the zoning objective for the subject lands, and their strategic location in close proximity to high quality, high frequency public transport, and the high level of demand for new housing in the area.

With regard to human health, the cumulative impact of the proposed development in conjunction with other nearby developments will provide for the introduction of high quality new neighbourhoods 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, as residents 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.

5.6 Mitigation Measures

Construction Phase

A bespoke and detailed Construction Management Plan (CMP) has been prepared by Waterman Moylan Engineering Consultants. The main purpose of a CMP is to provide a mechanism for implementation of the various mitigation measures which are described in chapter 20 of the EIAR. The purpose of this report is to summarise the possible impacts and measures to be implemented and to guide the Contractor who will be required to develop and implement the CMP on site.

All personnel will be required to understand and implement the requirements of the CMP and shall be required to comply with all legal requirements and best practice guidance for construction sites.

Project supervisors for the construction phase will be appointed in accordance with the Health, Safety and Welfare at Work (Construction Regulations) 2013, and a Preliminary Health and Safety Plan will be formulated during the detailed design stage which will address health and safety issues from the design stages, through to the completion of the construction phases.

Adherence to the construction phase mitigation measures presented in this EIAR will ensure that the construction of the proposed development will have an imperceptible and neutral impact in terms of health and safety.

Operational Phase

The proposed development has been designed to avoid negative impacts on population and human health through;

- The inclusion of a childcare facility within the proposed development;
- Landscaping to mitigate against issues arising from microclimate conditions;
- The inclusion of a comprehensive foul and surface water management system;
- Energy efficient measures; and,
- High quality finishes and materials.

5.3 Residual Impacts

It is anticipated that the proposed development will realise significant positive overall economic and social benefits for the local community and the wider Stillorgan area.

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 much needed housing will realise a likely significant positive effect for the local area.

5.4 Monitoring

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

Monitoring will be undertaken by the Building Regulations certification process and by the requirements of specific conditions of a planning permission.

Monitoring of compliance with Health & Safety requirements will be undertaken by the Project Supervisor for the Construction Process.

5.5 Reinstatement

While not applicable to every aspect of the environment considered within the EIAR, certain measures may be proposed to ensure that in the event of the proposal being discontinued, there will be minimal impact to the environment.

There are no reinstatement works proposed specifically with respect to population and human health.

5.6 Interactions

As noted above, 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 European Commission's Environmental Impact Assessment of Projects: Guidance on the Preparation of the Environmental Impact Assessment Report (2017), Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018) and the Draft Guidelines on the information to be contained in environmental impact assessment reports, published by the EPA in August 2017. 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 reader is directed to the relevant environmental topic chapter of this EIAR document for a more detailed assessment.

5.7 Difficulties Encountered

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

5.8 References

Central Statistics Office www.cso.ie.

Central Statistics Office (2016) – Census 2016

Central Statistics Office (2018) – CSO Statbank

DoHPLG (2017) Rebuilding Ireland – Action Plan for Housing and Homelessness

Dun Laoghaire Rathdown County Development Plan 2016-2022.

ESRI Quarterly Economic Commentary (June 2019)

Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report (European Commission 2017)

Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, Draft August 2017)

Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2002)