

## 4 POPULATION AND HUMAN HEALTH

### 4.1 Introduction

This chapter considers the potential effects of the Proposed Development on human beings, living, working and visiting in the vicinity of the site. The chapter details the potential direct and indirect effects of the Proposed Development on the local population and human health.

The section on Population and Human Health is broad ranging and covers the existence, wellbeing, and activities of people through the format of considering people as 'groups' or 'populations'. The assessment of impacts on human beings involves the identification of relevant key populations that may be affected by the proposal and quantifiable documentary research. Health, as defined by the World Health Organization (WHO), is *"a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"*.

Key populations have been identified as persons residing and engaging in activities near the Site, persons with a stake in the general economy of the local and regional area, and persons enjoying the recreational and cultural amenities of the area.

#### 4.1.1 Quality Assurance and Competency of Experts

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This chapter was reviewed by Harry Parker, Technical Director and EIA Lead at Enviroguide. Harry is an environmental consultant with 17 years' experience in consultancy, specialising in EIAs for large-scale residential and commercial developments, working closely with a range of developers, planning consultants and architects within the public and private sector. Harry has a MA in Environmental Impact Assessment and Management from the University of Manchester, UK.

### 4.2 Study Methodology

A desk-based study was undertaken in June 2024 to assess information regarding population, age structure, economic activity, employment, and unemployment within the vicinity of the Proposed Development. This study was undertaken in accordance with the *Guidelines on the information to be contained in Environmental Impact Assessment Reports*, EPA (2022).

The 2022 Census of Ireland was held on Sunday the 3rd of April 2022. The preliminary results were released on the 23rd of June 2022 with the remaining results being published over several months starting in April 2023.

The scope of this evaluation is based on a review of data available from the Central Statistics Office (CSO), legislation, guidance documents and EIARs.

The potential effects of the Proposed Development on the local population is assessed in this EIAR in relation to:

- Population demographics;
- Socio economic impacts;
- Water quality;
- Air quality;
- Noise and vibration;
- Traffic and transport; and
- General amenity and tourism.

Terms used to quantify the quality, significance and duration and frequency of effects as per EPA Guidelines have been detailed in Chapter 1 (EPA, 2022).

#### **4.2.1 Study Area**

No formal national guidance is available on the appropriate study area to focus the assessment of population and human health. As such, professional judgement has been applied in determining the appropriate study areas. Due to the wide reaching and often transient nature of people, the potential effects of the Proposed Development can be experienced at different scales. For example, the impact of air quality on human health will be experienced at a much smaller radius when compared to socio-economic impact which can be experienced at a community or regional level.

When choosing an appropriate study area for the potential effects on population and human health in this chapter, the extent of the area assessed varies. In order to assess baseline population and human health conditions in the wider area, the Glencullen Electoral Division (ED) was selected which contains the village of Kiltiernan and the Proposed Development site (Figure 4-1).

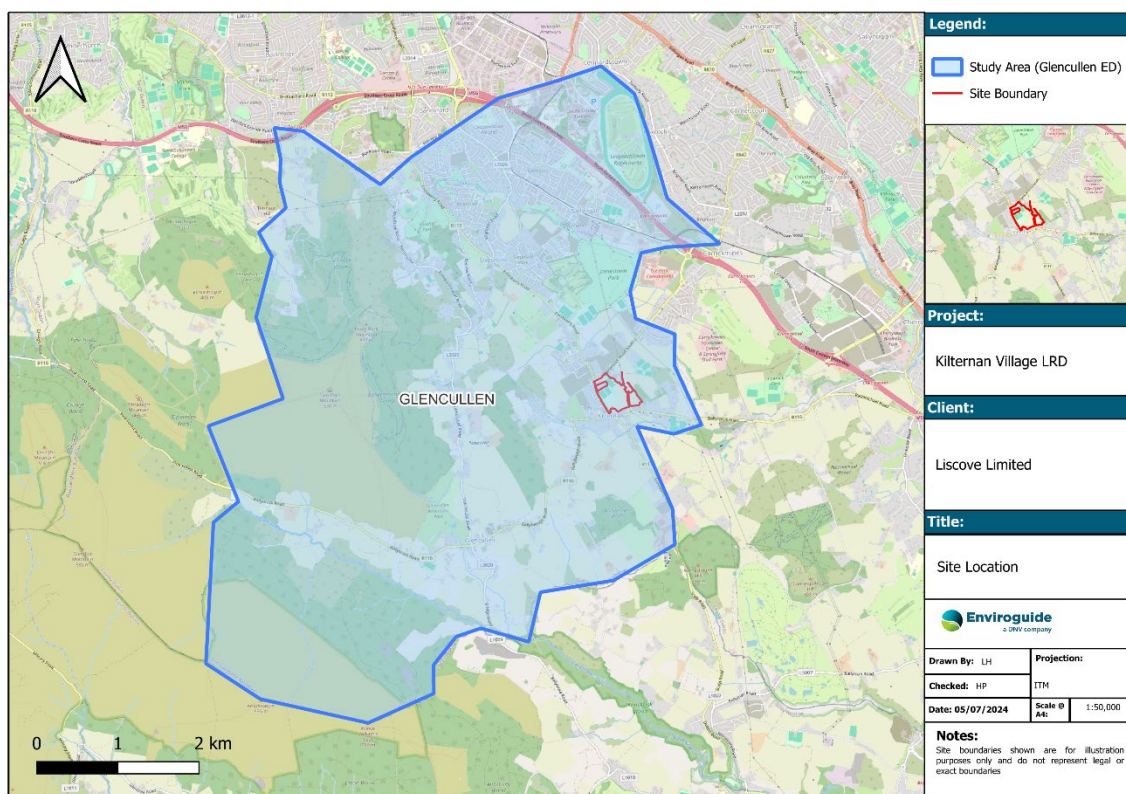


Figure 4-1 Study Area

## 4.2.2 Information Sources

The principal sources of information are as follows.

- Census and employment information published by the Central Statistics Office (CSO);
- Dún Laoghaire-Rathdown County Development Plan 2022-2028
- Ordinance Survey Ireland (OSI) mapping and aerial photography.

## 4.3 The Existing and Receiving Environment (Baseline Situation)

### 4.3.1 Population and Demographic Analysis

The most recent population figures published by the Central Statistics Office (CSO) indicate that the combination of a net inward migration and high birth rates have resulted in the population of Ireland has exceeded five million for the first time since 1851. Population projections for Ireland up to 2046 anticipate a population of approximately five million under the most pessimistic scenario and over 6.7 million under the most optimistic scenario. Population projections for Northern Ireland up to 2034 anticipate a population of approximately two million.

Table 4-1 shows population of the Glencullen ED, Dun Laoghaire-Rathdown County (DLRC) and the State as recorded during the 2016 and 2022 Census, as well as the percentage change in population during this period to highlight overall residential patterns. Glencullen ED

has experienced a significant increase in population (+19.33%) which exceeds the average for DLRC (+7.27%) and the State (+8.13%).

*Table 4-1 Population Change in Glencullen ED and DLR County and Ireland from 2016 to 2022 (Source: CSO 2024)*

Area	Population 2016 Census Data	Population 2022 Census Data	Change in Number of People	Percentage change in Population
Glencullen ED	19,773	23,596	3,823	19.33
Dún Laoghaire Rathdown	218,018	233,860	15,842	7.27
Ireland	4,761,865	5,149,139	387,274	8.13

Population projections for Dún Laoghaire Rathdown County have been estimated in the Regional Spatial and Economic Strategy (RSES) 2019-2031 and the National Planning Framework (NPF) (rounded to the nearest 500 persons).

Table 4-2 details the low and high population projections for Dún Laoghaire Rathdown County for the period 2022-2028. These estimations have been informed by the Regional Spatial and Economic Strategy (RSES) 2019-2031 and the National Planning Framework (NPF) (rounded to the nearest 500 persons) (Chapter 2, Core Strategy, Dún Laoghaire Rathdown County Development Plan 2022-2028). When taking the highest estimations, the population of Dún Laoghaire Rathdown in 2026 and 2031 will be 252,375 and 256,125 respectively.

*Table 4-2 Population projections for Dún Laoghaire Rathdown*

Area	2016	2026 low -2026 high	2028 low – 2028 high <sup>1</sup>
Dún Laoghaire Rathdown	218,000	246,750 to 252,375	249,125 to 256,125

### 4.3.2 Population and Age

The social and community needs are assessed based on consideration of the existing and potential population growth and best practice provision. CSO data for 2022 recorded a total of 23,596 people live in Glencullen.

Table 4-3 shows the breakdown of the population of Glencullen, Dún Laoghaire Rathdown and the State based on their age range. This table is further broken down into percentages of the population within these age ranges.

<sup>1</sup> The Dún Laoghaire Rathdown County Development Plan 2022-2028 has estimated these figures for Q1 of 2028.

*Table 4-3 Population categories by age for Glencullen, Dún Laoghaire Rathdown and the State (CSO, 2024)*

Age Range	Glencullen ED		Dún Laoghaire Rathdown		Ireland	
	No. of People	% of People	No. of People	% of People	No. of People	% of People
0-4 years	1,756	7.44	12,654	5.41	295,415	5.74
5-24 years	6,807	28.85	60,123	25.71	1,361,643	26.44
25-34 years	3,403	14.42	30,339	12.97	628,031	12.20
35-44 years	4,594	19.47	34,267	14.65	794,393	15.43
45-54 years	3,441	14.58	30,315	12.96	713,507	13.86
55-64 years	2,098	8.89	26,244	11.22	579,835	11.26
65-74 years	855	3.62	20,087	8.59	441,028	8.57
75 years and over	642	2.72	19,831	8.48	335,287	6.51
<b>Total</b>	<b>23,596</b>		<b>233,860</b>		<b>5,149,139</b>	

Glencullen has a lower percentage of people aged over 65 when compared with the State (6.34% versus 15.08% respectively). In Glencullen ED, the largest portion of the population is aged 5-24 years reflecting 28.85% of the overall population which is in line with values for the State (26.44%). There are more people in Glencullen ED aged 35-44 years (19.47%) when compared with Dún Laoghaire Rathdown (14.65%) and the State (15.43%). No other age group in Glencullen ED differs from the average in Dún Laoghaire Rathdown or the State by more than 3%.

### 4.3.3 Economic Activity and Employment

The labour force is defined as the number of people above the legal working age that are available to work. Table 4-4 shows the percentage of the population who were in the labour force during the 2022 census.

The number of people at work in Glencullen (66.80%) is significantly higher than the average for Dún Laoghaire Rathdown (55.62%) and the State (56.09%). This corresponds to the lower-than-average number of people who are retired in Glencullen (7.33%) when compared with Dún Laoghaire Rathdown (18.00%) and the State (15.90%). No other economic status in Glencullen ED differs from the average in Dún Laoghaire Rathdown or the State by more than 3%.

*Table 4-4 Principal economic status in Glencullen, Dún Laoghaire Rathdown and the State (CSO, 2024)*

Principle Economic Status	Glencullen ED		Dún Laoghaire Rathdown		State	
	No. of People	Percent	No. of People	Percent	No. of People	Percent
At work	12,097	66.80	106,548	55.62	2,320,297	56.09
Looking for first regular job	133	0.73	1,223	0.64	34,526	0.83
Short term unemployed	266	1.47	2,595	1.35	70,217	1.70
Long term unemployed	359	1.98	3,232	1.69	106,059	2.56
Student	2,401	13.26	25,396	13.26	459,275	11.10
Looking after home/family	1,075	5.94	12,165	6.35	272,318	6.58
Retired	1,328	7.33	34,484	18.00	657,790	15.90
Unable to work due to permanent sickness or disability	386	2.13	4,964	2.59	189,308	4.58
Other	63	0.35	950	0.50	27,062	0.65
<b>Total</b>	<b>18,108</b>		<b>191557</b>		<b>4,136,852</b>	

The closest social welfare office to the Proposed Development which has figures available for the number of people on the Live Register / Unemployed is Dun Laoghaire Intreo Centre which covers the area of Glencullen and Kiltarnan. The Live Register is used to provide a monthly series of the numbers of people (with some exceptions) registering for Jobseekers Benefit or Jobseekers Allowance or for various other statutory entitlements at local offices of the Department of Social Protection. At the time of carrying out this baseline assessment, the most recent information available is from April 2024. Table 4-5 shows that the number of people on the live register remains relatively constant with numbers fluctuating between +3.15% and -2.55% over the previous 6 months.

*Table 4-5 Number of people on the live register in Dún Laoghaire and surrounding area (CSO, 2024)*

Month	No. of people	Percentage change
2023 November	3047	
2023 December	3143	+3.15

<b>2024 January</b>	3224	+2.58
<b>2024 February</b>	3254	+0.93
<b>2024 March</b>	3171	-2.55
<b>2024 April</b>	3192	+0.66

Table 4-6 shows the industries the people of Glencullen work in compared with Dún Laoghaire Rathdown and the State. The top three groups which account for 75.39% of Glencullen are:

- Commerce and trade;
- Professional services; and
- Transport and communications.

*Table 4-6 Industry in which people work in Glencullen, Dún Laoghaire Rathdown and the State (CSO, 2024)*

Industry	Glencullen ED		Dún Laoghaire Rathdown		State	
	No. of People	Percent	No. of People	Percent	No. of People	Percent
Commerce and trade	4,221	34.89	36,698	34.44	552,642	23.82
Professional services	2,695	22.28	26,711	25.07	568,105	24.48
Transport and communications	2,204	18.22	15,939	14.96	212,383	9.15
Other	1,350	11.16	12,621	11.85	365,716	15.76
Manufacturing industries	814	6.73	6,368	5.98	273,102	11.77
Building and construction	393	3.25	3,306	3.10	134,482	5.80
Public administration	392	3.24	4,721	4.43	131,639	5.67
Agriculture, forestry and fishing	28	0.23	184	0.17	82,228	3.54
<b>Total</b>	<b>12,097</b>		<b>106548</b>		<b>2,320,297</b>	

Table 4-7 shows the occupation of people in Glencullen compared with Dún Laoghaire Rathdown and the State. The top three groups which account for 62.76% of Glencullen are:

- Professional Occupations;
- Associate Professional and Technical Occupations; and
- Managers, Directors and Senior Officials.

*Table 4-7 Occupation of people in Glencullen, Dún Laoghaire Rathdown and the State (CSO, 2024)*

Occupation	Glencullen ED		Dún Laoghaire Rathdown		State	
	No. of People	Percent	No. of People	Percent	No. of People	Percent
Managers, Directors and Senior Officials	1,521	11.96	13,791	12.27	192,679	7.72
Professional Occupations	4,119	32.38	38,110	33.91	507,044	20.31
Associate Professional and Technical Occupations	2,344	18.42	19,440	17.30	292,273	11.71
Administrative and Secretarial Occupations	1,183	9.30	10,272	9.14	229,737	9.20
Skilled Trades Occupations	719	5.65	6,210	5.53	313,921	12.57
Caring, Leisure and Other Service Occupations	586	4.61	5,751	5.12	183,584	7.35
Sales and Customer Service Occupations	772	6.07	5,992	5.33	154,238	6.18
Process, Plant and Machine Operatives	313	2.46	2,611	2.32	172,521	6.91
Elementary Occupations	482	3.79	4,633	4.12	203,532	8.15
Not stated	683	5.37	5,565	4.95	247,044	9.90
<b>Total</b>	<b>12,722</b>		<b>112,375</b>		<b>2,496,573</b>	

In relation education, Table 4-8 shows the highest level of education in Glencullen compared with Dún Laoghaire Rathdown and the State. The highest level of education in Glencullen is postgraduate diploma or degree (24.16%) followed by honours bachelor's degree, professional qualification or both (22.08%). These values are in line with those for Dún Laoghaire Rathdown but significantly higher when compared with values for the State.



*Table 4-8 Highest Level of Education Completed in Glencullen, Dún Laoghaire Rathdown and the State (CSO, 2024)*

Highest Level of Education Completed	Glencullen ED		Dún Laoghaire Rathdown		State	
	No. of People	Percent	No. of People	Percent	No. of People	Percent
Postgraduate diploma or degree	3,418	24.16	35,947	23.25	379,416	11.21
Honours bachelor degree, professional qualification or both	3,123	22.08	31,747	20.53	450,523	13.31
Upper secondary	1,794	12.68	21,967	14.21	613,478	18.13
Ordinary bachelor degree or national diploma	1,485	10.50	15,244	9.86	272,535	8.05
Lower secondary	848	5.99	11,165	7.22	446,007	13.18
Higher certificate	778	5.50	7,672	4.96	187,488	5.54
Technical or vocational qualification	771	5.45	7,827	5.06	253,892	7.50
Not stated	613	4.33	5,461	3.53	220,311	6.51
Advanced certificate/Completed apprenticeship	579	4.09	5,358	3.47	190,268	5.62
Primary education	310	2.19	5,948	3.85	251,219	7.42
Doctorate (Ph.D) or higher	292	2.06	4,498	2.91	38,212	1.13
No formal education	136	0.96	1,781	1.15	81,280	2.40
<b>Total</b>	<b>14,147</b>		<b>154,615</b>		<b>3,384,629</b>	

#### 4.3.4 Travel and Commuting

As detailed in Table 4-9, the time period that most people leave for work, school or college is 07:31 to 08:00 (27.43%) followed by 08:01 to 08:30 (24.67%) and 07:01 to 07:30 (13.61%). The busiest time period for commuting is between 07:01 and 08:30 with a total of 65.71% of people departing home during this time.

*Table 4-9 Time Leaving Home to Travel to Work, School or College*

Departure times	Glencullen ED		Dún Laoghaire Rathdown		State	
	No. of People	Percent	No. of People	Percent	No. of People	Percent
Before 06:30	631	4.03	5,189	3.74	212,439	6.67
06:30 - 07:00	1,346	8.60	11,460	8.26	312,861	9.82
07:01 - 07:30	2,130	13.61	15,534	11.20	299,508	9.40
07:31 - 08:00	4,293	27.43	35,288	25.44	564,895	17.73
08:01 - 08:30	3,862	24.67	35,314	25.46	716,822	22.49
08:31 - 09:00	1,365	8.72	15,802	11.39	479,703	15.05
09:01 - 09:30	330	2.11	3,500	2.52	89,676	2.81
After 09:30	794	5.07	8,778	6.33	184,515	5.79
Not stated	902	5.76	7,858	5.66	326,542	10.25
<b>Total</b>	<b>15,653</b>		<b>138,723</b>		<b>3,186,961</b>	

Table 4-10 shows the majority of people travel 45 minutes or less to work, school or college (74.45%) indicating that most people live and go to work, school or college within 45-minute drive time radius.

*Table 4-10 Journey Time to Work, School or College*

Journey Time	Glencullen ED		Dún Laoghaire Rathdown		State	
	No. of People	Percent	No. of People	Percent	No. of People	Percent
Under 15 mins	2,930	18.72	29,577	21.32	936,520	29.39
1/4 hour - under 1/2 hour	4,749	30.34	44,492	32.07	894,844	28.08
1/2 hour - under 3/4 hour	3,975	25.39	33,359	24.05	550,229	17.27
3/4 hour - under 1 hour	1,533	9.79	12,279	8.85	186,834	5.86
1 hour - under 1 1/2 hours	1,231	7.86	8,952	6.45	195,397	6.13
1 1/2 hours and over	235	1.50	1,796	1.29	80,867	2.54
Not stated	1,000	6.39	8,268	5.96	342,270	10.74
<b>Total</b>	<b>15,653</b>		<b>138,723</b>		<b>3,186,961</b>	

Table 4-11 shows the most utilised means of travel is by car either as a driver (29.25%) or as a passenger (17.79%). This represents 47.04% of people in the study area that rely on private car usage. Bus, minibus or coach usage is lower in Glencullen when compared with values

for the State. A higher percentage of people utilise train, DART or LUAS services in Glencullen when compared to values for the State (16.53% compared to 2.36%). These trends in public transport usage are reflective of the availability of frequent rail services in the area.

*Table 4-11 Means of travel to work, school, college or childcare*

Means of Travel	Glencullen ED		Dún Laoghaire Rathdown		State	
	No. of People	Percent	No. of People	Percent	No. of People	Percent
Bicycle	686	3.60	11,135	6.69	97,212	2.69
Bus, minibus or coach	1,047	5.50	15,267	9.18	323,923	8.96
Train, DART or LUAS	3,147	16.53	18,269	10.98	85,316	2.36
Motorcycle or scooter	59	0.31	815	0.49	9,150	0.25
Car Driver	5,570	29.25	45,010	27.05	1,254,419	34.72
Car passenger	3,387	17.79	23,639	14.21	691,044	19.12
Van	277	1.45	2,328	1.40	148,823	4.12
Other (incl. lorry)	39	0.20	229	0.14	14,092	0.39
Work mainly at or from home	2,302	12.09	19,988	12.01	266,726	7.38
Not stated	734	3.86	6,006	3.61	266,412	7.37
<b>Total</b>	<b>19,040</b>		<b>166,375</b>		<b>3,613,408</b>	

#### 4.3.5 Human Health

Health, as defined by the World Health Organization (WHO), is *"a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"*. The Healthy Ireland Framework 2013-2025 defines health as *'everyone achieving his or her potential to enjoy complete physical, mental and social wellbeing. Healthy people contribute to the health and quality of the society in which they live, work and play'*. This framework also states that health is much more than an absence of disease or disability, and that individual health, and the health of a country affects the quality of everyone's lived experience.

Health is an essential resource for everyday life, a public good and an asset for health and human development. A healthy population is a major asset for society and improving the health and wellbeing of the nation is a priority for Government. Healthy Ireland Framework 2013-2025 is a collective response to the challenges facing Ireland's future health and wellbeing.

Statistics for general health were not available for the study area and are only available for towns. The closest towns to the study area for which data is available are Naas and Newbridge. Table 4-12 shows that 80.65% of people have self-identified themselves as having “very good” or “good” health.

*Table 4-12 General Health of Population in Dublin City and Suburbs*

General Health	Dublin City and Suburbs		State	
	No. of People	Percent	State	Percent
Very Good	661,766	52.39	2,740,994	53.23
Good	356,942	28.26	1,527,027	29.66
Fair	101,941	8.07	444,895	8.64
Bad	18,174	1.44	72,556	1.41
Very Bad	4,241	0.34	16,843	0.33
Not Stated	120,155	9.51	346,824	6.74
<b>Total</b>	<b>1,263,219</b>		<b>5,149,139</b>	

#### 4.3.6 Social Health

According to the World Health Organisation, poor social and economic circumstances affect health throughout life. Good health involves reducing levels of educational failure, reducing insecurity and unemployment, and improving housing standards. Health is influenced, either positively or negatively, by a variety of factors. Some of these factors are genetic or biological and are relatively fixed. ‘*Social determinants of health*’ arise from the social and economic conditions in which people live. They are not so fixed such as type of housing and environments, access to health or education services, incomes generated and the type of work people do, can all influence a person’s health, and the lifestyle decisions people make.

A range of factors have been identified as social determinants of health. These can include the wider socio-economic context, inequality, poverty, social exclusion, socioeconomic position, income, public policies, health services, employment, education, housing, transport, the built environment, health behaviours or lifestyles, social and community support networks and stress.

People who are less well off or who belong to socially excluded groups tend to fare badly in relation to these social determinants. Being at work on the other hand provides not only an income, but also access to social networks, a sense of identity and opportunities for development or progression.

Figure 4-1 presents the social determinants of health adapted from Dalghren and Whitehead (1991) and Grant and Barton (2006) as presented in Healthy Ireland.

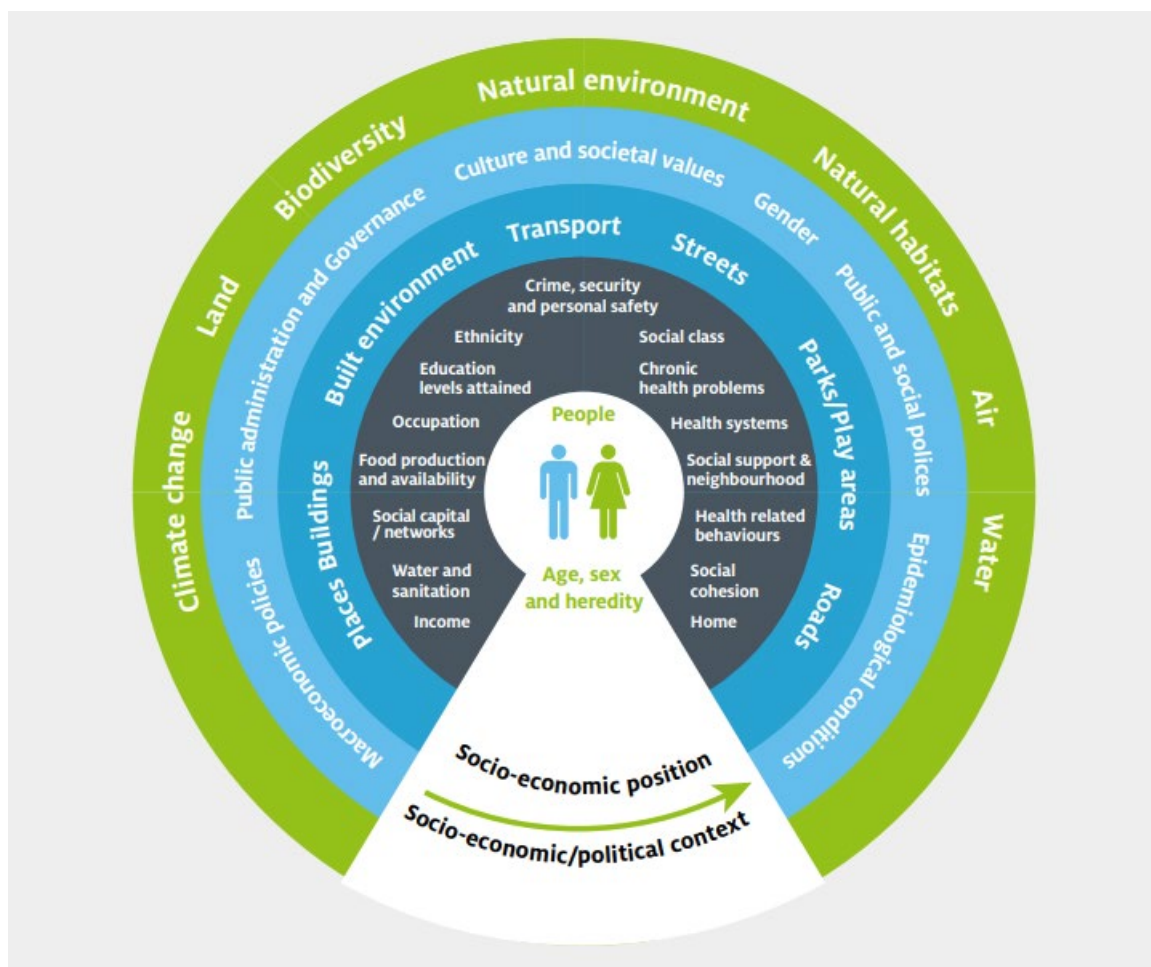


Figure 4-2 Social Determinants of Health (Healthy Ireland, DOH 2013)

Section 4.3.3 of this chapter states that 66.80% of people in Glencullen are in the labour force / at work. This reflects the high number of people of a working profile living within the area which is expected due to the percent of people of a working age living in the area.

#### 4.3.7 Summary of Baseline Environment

The following points are summarised:

- There are a high number of young people and people of a working profile in Glencullen when compared to the averages for Dún Laoghaire Rathdown and the State. This is also compounded by the lower-than-average number of people aged 65 years and over.
- The number of people at work in Glencullen is higher than the average for Dún Laoghaire Rathdown and the State. This corresponds to the lower-than-average number of people who are retired in Glencullen when compared with Dún Laoghaire Rathdown and the State.
- Bus, minibus, or coach usage is lower, and train, DART or LUAS services are higher in Glencullen when compared to values for the State. These trends in public transport usage are reflective of the availability of frequent rail services in the area.

- Most people travel 45 minutes or less to work, school or college (74.45%) indicating that most people live and go to work, school or college within 45-minute time radius.

#### 4.3.8 Summary of Receptors and Sensitivity

Several sensitive receptors were identified based on the baseline assessment.

*Table 4-13 Summary of Receptor Sensitivity*

Receptor	Description	Sensitivity
Population demographics of the study area and local community	The baseline population demographics show the study area has a high number of young people and people of a working profile and a lower-than-average number of people aged 65 years and over when compared with the county and state.	Low
Local economy	The number of people at work in the study area is higher than the state average and the number of retired people is lower than the state average indicating a high number of people in the workforce. The number of people who are short term and long term unemployed are in line with those for the county and state.	Medium
Local population (water quality)	Safe, clean drinking water is essential for population and human health.	Medium
Local population (air quality)	Nuisance dust emissions from operational activities, including traffic can negatively impact air quality.	Medium
Local population (noise and vibration)	Noise exposure can cause a variety of human health effects including annoyance, sleep disturbance, raised stress levels, work impacts for commercial receptors or individuals who work from home.	Medium
Local road network	Operational vehicle movements to and from the site can affect the capacity of the local road network to support these additional journeys.	Low
Local amenities	Amenities including tourism sites and community infrastructure contribute to a sense of community and the social health of the surrounding population.	Medium

## **4.4 Characteristics of the Proposed Development**

The Proposed Development will principally consist of the demolition of existing structures on site and the provision of a mixed-use development consisting of 487 no. residential units, a neighbourhood centre, an anchor retail store, retail / commercial spaces, a restaurant, a creche, café and community facility. The Proposed Development will range in height from 2 no. to 4 no. storeys.

Chapter 2 of this EIAR has described the Proposed Development in further detail.

## **4.5 Potential Impact of the Proposed Development**

### **4.5.1 Construction Phase**

#### **4.5.1.1 Population demographics**

The construction phase will create short term construction related employment and on average, there will be an estimated total of 100 employees during construction. Due to the fact that employees may either be already resident in the local area or may travel to and from the site from surrounding towns, the effect on population demographics has been assessed at a county level. The sensitivity of the receptor has been identified as low. The magnitude of the impact is low.

Based on the mobile nature of construction and the baseline population assessment, the likely effect on population demographics as result of the Proposed Development will be direct, short term and imperceptible.

#### **4.5.1.2 Socio-economic**

The Construction Phase will create short term construction related employment and on average, there will be a maximum of 100 employees during construction over a period of 5 years. This is an average number of employees and in practise the number will vary across the construction period depending on the type and intensity of construction activities. Employment creation will have a direct effect on the local economy but also an indirect effect through daily spending by employees in local businesses.

Due to the fact that employees may either be already resident in the local area or may travel to and from the Site from surrounding towns, the socio-economic effect has been assessed at both a local scale and a county level.

The sensitivity of the receptor in the study area has been identified as medium. The magnitude of the impact is low. Based on the mobile nature of construction and the baseline assessment of economic activity, the likely effect on the economy on a local scale will be both direct and indirect, short term positive and imperceptible. At a county scale, the likely effect on the economy will be both direct and direct, short term, positive and imperceptible.

### **4.5.1.3 Water Quality**

During the construction phase there is potential for demolition, excavation and construction works to effect ground water and surface water quality. Surface water runoff with cementitious materials used during the construction of foundations, pavements and other structures, suspended solids or other potentially deleterious materials could enter the underlying groundwater at the site.

Surface water runoff will be managed during the construction phase to ensure there will be no direct discharge to groundwater or surface water. The mitigation measures outlined in Chapter 7 Hydrology of this EIAR combined with the mitigation measures within the Construction Environmental Management Plan (CEMP) (Enviroguide, July 2024) will ensure that there will be no significant effect on the receiving groundwater and surface water environment.

The effect of the Proposed Development on water quality and human health will be neutral, imperceptible and short term.

### **4.5.1.4 Air Quality and Climate**

The greatest potential impact on air quality during this phase is from construction dust emissions and the potential for nuisance dust. Construction vehicles and machinery during the Construction Phase will also temporarily and intermittently generate exhaust fumes and consequently potential emissions of volatile organic compounds, nitrogen oxides, sulphur oxides, and particulate matter (dust). Fine particles from these sources are recognised as a potential significant cause of pollution and can be damaging to the health of the surrounding population during the Construction Phase.

According to the Health Service Executive (HSE), the health effects associated with the main pollutants of concern are:

- Nitrogen Dioxide, Sulphur Dioxide, Ozone - Irritate the airways of the lungs, increasing the symptoms of those suffering from lung diseases.
- Particles (PM10, PM2.5) - Can be carried deep into the lungs where they can cause inflammation and a worsening of heart and lung diseases.
- Carbon Monoxide - Prevents the uptake of oxygen by the blood and poses a greater risk to those suffering from heart disease.

There are several high-sensitivity receptors (residential dwellings) located within 50m of the site boundary; these are mainly situated to the west of the site. There are also a small number of residential dwellings located to the north, northeast and south of the site. Appropriate mitigation and monitoring measures have been recommended in Chapter 8 Air Quality and the CEMP and the and will be implemented at the site in order to minimise the risk of dust emissions arising during construction and demolition (Enviroguide, July 2024).

Construction traffic is not expected to result in a significant change in AADT flows near to sensitive receptors and according to IAQM guidance are unlikely to have a significant effect on local air quality.



Based on the above, the likely effect of air quality on population and human health will be negative, short term and slight.

#### **4.5.1.5 Noise and Vibrations**

Noise exposure can cause a variety of human health effects including annoyance, sleep disturbance, raised stress levels, work impacts for commercial receptors or individuals who work from home. Noise generating activities associated with the Construction Phase have been identified in Chapter 9 Noise and Vibrations of this EIAR and include vehicular traffic as well as noise from the operation of fixed or mobile machinery onsite. During the Construction Phase all operations will comply with the BS5228:2009 “*Noise and Vibration Control on Construction and Open Sites*”.

The nearest noise sensitive locations (NSL) in relation to population and human health are residential properties which are located approximately 30m - 40m from the Proposed Development Site Boundary. Noise from onsite plant and equipment has been assessed in Chapter 9 Noise and Vibrations and it is not envisaged that any excessively noisy activities will be carried out over extended periods of time during the construction stage.

Typical working hours for the site will be subject to the condition of the planning permission but are expected to be Monday to Friday from 7am to 7pm and Saturdays from 7am to 2pm. Special construction operations may need to be carried out outside these hours to minimise disruption to the surrounding area, which will be subject to agreement with the Local Authority. No activities will be permitted onsite outside of these hours unless by prior agreement with the Local Authority. These set working hours will minimise the short-term noise impacts on the surrounding population.

It is not anticipated that the adopted noise criteria will be exceeded during the construction phase at the closest NSLs (30m and 40m from the site boundary). It is concluded that the likely noise impact of the development in the construction phase is therefore negative, short term and slight.

#### **4.5.1.6 Traffic and Transport**

There is potential for construction traffic to impact the surrounding population and human health by causing congestion on the local road network. The Outline Construction Management Plan (Atkins, July 2024) (Appendix 4-1) details a series of traffic control measures to ensure any potential impacts on the adjacent local and strategic road network are minimised. Construction vehicles and HGVs will be restricted to using only the approved means of access and movement of construction vehicles will be restricted to the designated routes within the Outline Construction Management Plan. HGV movements will be restricted during peak AM and PM hours to minimise any disruption to the nearby schools. The likely traffic impact of the construction works will be negative, short-term and slight.

#### **4.5.1.7 Landscape and Visual Impact**

During the Construction Phase the Site landscape will undergo a change which will have a visual impact. This will potentially impact on the visual amenity of the nearby visual receptors. These landscape impacts will reduce rapidly with distance from the site boundaries, and

intervening hedgerows, open park spaces, and existing buildings will further reduce the impacts to minor to negligible, negative and short term for the Construction Phase.

It is concluded that the Proposed Development will, therefore, have a minor, negative and short to medium-term impact on the landscape character of the Site during the Construction Phase.

## **4.5.2 Operational Phase**

### **4.5.2.1 Population demographics**

The Proposed Development will provide 487 no. residential units and will cater for a wide range of people including families, older persons and young couples. In relation to the existing population in the Glencullen ED and the baseline demographic assessment completed in Section 4.3, the Proposed Development will have a neutral, long term and slight effect on population demographics.

Taking the total number of private households and the number of people in private households, the average household occupancy for the Study Area is 2.96. The Proposed Development will include 487 no. residential units providing an estimated increase in population to the study area of 1,441 people. The average number of people per private household for Dún Laoghaire Rathdown County Council is slightly lower than the study area with a value of 2.71 which would provide an estimated increase in population to the study area of 1,319 people (CSO, 2022). Both estimations will result in a sizeable addition to the study area. This is considered to have a positive, long-term effect on population and human health particularly in the context of current housing demand, while also taking account of the location's access to high quality public transport and places of employment.

### **4.5.2.2 Socio-economic**

The operational phase will create medium to long term employment. The Proposed Development will allow for the creation of new employment in the creche, office, cafe, restaurant, and retail units. As the end users of these units are currently unknown, staffing numbers are difficult to predict. Dún Laoghaire-Rathdown County Council Standards for Cycle Parking for New Developments Guidance (2018) (Section 4.2);

*“Where the number of staff is not known at planning application stage, the following can be used as a guide:*

- *Office type uses 20 m<sup>2</sup> per staff member.*
- *Warehousing or small industry type uses 50 m<sup>2</sup> per staff member.*
- *All other uses including retail 40 m<sup>2</sup> per staff member.”*

Based on these guidelines, approximately 148 no. jobs will be created during the Operational Phase of the Proposed Development having a positive impact, both directly and indirectly to the local economy and employment.

The Proposed Development will consist of a total of 487 no. residential units and result in an increase in the population of the surrounding area. A Social Infrastructure Audit (SIA) (including Schools and Creche Demand Assessment) was carried out by Thornton O'Connor

Town Planning (July 2024) (Appendix 4-2). This report established the capacity of the existing social infrastructure within a 1km study area surrounding the Proposed Development to support the needs of the existing population and future residents. The Proposed Development includes a neighbourhood centre, a creche, a restaurant and retail / commercial space which will positively contribute to the existing social infrastructure and amenities of the residents once completed. The following categories were utilised when assessing social infrastructure within the 1km radius study area.

- Education and Training Services
- Childcare Facilities
- Social, Community and Cultural Facilities
- Healthcare and Emergency Services
- Open Space and Recreation
- Religious Institutions
- Retail Centres and Services

The assessment concluded:

*“the area is well served with respect to many forms of social infrastructure, but needs improvement in key areas. If successful, the non-residential component of this application would address each of these highlighted deficits and includes a significant contribution of social infrastructure to meet local needs (existing and future).”*

The SIA also concluded that *“there is an adequate supply of healthcare, education, parks and amenity areas, playing pitches and sporting facilities available to local residents.”* The area also has frequent public transport links to a wider range of facilities located in nearby Leopardstown, Carrickmines, Stepside and Dublin City Centre.

The SIA also completed a childcare survey which estimated the potential number of children that may reside in the Proposed Development and may require a space in a childcare facility. The SIA identified a shortfall in available childcare places to meet the existing demands of the area in May 2024. Based on the estimated number of 0–6-year-olds residing at the proposed development, only 48 no. children would attend a childcare facility. Based on the size of the proposed creche, the creche will have capacity for 131 no. children. Based on the figures above, the proposed creche would be a welcome provision for the development and within the area, to accommodate any future and excess demand within the development and broader study area.

#### **4.5.2.3 Water Quality**

There will be no significant sources of contamination during the operational phase. Chapter 7 Hydrology and Hydrogeology of this EIAR has concluded *“there will be a ‘neutral’, ‘imperceptible’, ‘long-term’ impact on to the quality of receiving hydrological receptors including the River Liffey.”*

Based on the implementation of the mitigation measures outlined in Chapter 7 Hydrology and Hydrogeology, the likely effect on water quality and subsequently human health will be direct, long term, neutral and imperceptible.

#### **4.5.2.4 Air Quality and Climate**

The greatest potential effect on air quality during the operational phase is from traffic-related air emissions. Chapter 8 Air Quality and Climate notes that the impact of the Proposed Development is predicted to be imperceptible with respect to the operational phase in the long term. Therefore, no site-specific mitigation measures are required.

Sustainable modes of transport are encouraged through the pedestrian and cycle links to the surrounding area and the provision of bicycle parking. By sustainably densifying the Site through the provision of medium density housing and a Neighbourhood Centre on underutilised lands at the heart of Kiltiernan Village, the Proposed Development will contribute to improved air quality through integrated land use and spatial planning that supports public transport, walking and cycling as more favourable modes of transport.

An Energy Statement has been prepared by Waterman Moylan (July 2024) which identifies the energy standards with which the Proposed Development will have to comply and sets out the overall strategy that will be adopted to achieve these energy efficiency targets. The dwellings will be required to minimise overall energy use and to incorporate an adequate proportion of renewable energy in accordance with Building Regulations Part L 2019, Conservation of Energy and Fuel.

Based on the above assessment the likely effect of the Proposed Development on air quality and climate and subsequently human health will be direct, long term, neutral and imperceptible.

#### **4.5.2.5 Noise and Vibrations**

Noise associated with traffic movements and operational phase activities can negatively impact the population and human health of the surrounding residents. Noise sensitive receptors have been identified as primarily residential properties and have been listed in Chapter 9 of this EIAR. The main noise sources for the operation of the new developments are anticipated to be vehicles using the car park, heavy goods vehicles (HGV) movements, plant and equipment noise and operational noise from the loading and unloading of HGVs.

Noise is fully assessed in Chapter 9 of this EIAR. The residential aspect of the development is not expected to generate any significant noise sources over and above those which form part of the existing environment at neighbouring residential areas (estate vehicle movements and children playing) and hence no significant effects are expected from this area of the site.

The primary source of outward noise in the operational context relates to changes in traffic flows along the local road network and any operational plant noise used to serve the ancillary elements within the house, duplex and apartment buildings and retail / commercial units. No traffic routes are predicted to experience increases of more than 25% in total traffic flows during the operational phase. The impact of noise from operational traffic will be unnoticeable and will not have a negative impact.

A ProPG: Acoustic Design Statement has been prepared by RSK (July 2024) which considers the potential impact of the existing and future noise sources on future residents of the Proposed Development, along with an assessment of the potential operational phase noise

impact of the Proposed Development to nearby existing receptors. The report considers the impact of the existing traffic and the future Glenamuck District Roads Scheme (GDRS) traffic noise on the Proposed Development. Measures to mitigate noise impacts have been specified within this report and can be summarised as;

- Provision of glazing with minimum sound insulation properties
- Provision of acoustically attenuated ventilation with minimum sound insulation properties

The ProPG Acoustic Design Statement concluded that the likely noise impact of the Proposed Development in its operational phase is not significant.

The impact assessment of noise and vibration has concluded that additional noise associated with the operation of the facility will not exceed the relevant noise thresholds beyond the site boundary. Mitigation and monitoring measures will be incorporated to further reduce the potential for noise generation from the Proposed Development.

Based on the above assessment the likely effect of the Proposed Development on noise and vibration and subsequently human health will be direct, long term, negative and imperceptible.

#### **4.5.2.6 Traffic and Transport**

A full assessment of traffic and transport impacts during the Operational Phase are presented in Chapter 13 of this EIAR. The chapter concluded that the impact of development traffic on the local road network will be negative, not significant and medium to long term.

The Proposed Development Site is served by public transport and is within a short distance of key employment locations such as Kiltiernan Village, Stepside Village, Carrickmines, Enniskerry, Sandyford Business District, Dundrum and links to the M50. The Ballyogan Wood LUAS stop is located within 2.3 km – 2.7 km to the north-east (26-31 minutes walking distance). Access to the M50 Carrickmines (Exit 15) is located 1.9 km from the Site, a 3 No. minute car journey away. Bus route Nos. 44, 63 and 118 serve the Kiltiernan and Glenamuck area with direct links to Dublin City Centre and institutions such as Dublin City University in Glasnevin. There are also several proposed new bus routes for Kiltiernan within the Bus Connects scheme which will serve Kiltiernan Village and offer transport links to Dublin City Centre and other suburbs and employment and education facilities in the greater Dublin area such as University College Dublin.

Access to public transport services such as the LUAS and Dublin Bus, easy access to the M50, the proposed GDRS scheme along with the new Bus Connects scheme will reduce traffic volume. Furthermore, the Proposed Development will promote and encourage sustainable modes of transport by providing permeable linkages through the site such as the Dingle Way and through various pedestrian and cycle links to the surrounding area and the provision of bicycle parking.

Therefore, the accessible urban location of the Proposed Development Site, provided with high quality walking and cycling facilities in proximity to a wide range of services and employment locations will ultimately promote sustainable modes of transport and result in a neutral, slight and long-term effect on population and human health.

#### **4.5.2.7 Landscape and Visual Impact**

The potential landscape and visual effects of the Proposed Development are fully assessed in Chapter 10 of this EIAR. The Proposed Development has the potential to cause visual impact during the Operational Phase. The site is currently predominately greenfield and includes a derelict farmyard area. The surrounding area is predominantly residential and agricultural.

Significant changes will occur on the landscape of the site, mainly with the removal of some trees and hedgerows and general construction activity to the implementation of the proposed buildings, but these changes will also be counterbalanced with the implementation of the new green structure and maintenance of some of the most important hedgerows and trees.

A range of high-quality public and communal open spaces have been included in the landscape design for the recreational and amenity requirements of future residents and for the wider community. This, in conjunction the pedestrian / cycle links provided through the site, will enhance the amenity of Kiltiernan Village.

The Proposed Development will make a positive contribution to the surrounding area by developing a key underutilised site and providing a high-quality residential development and Neighbourhood Centre, which will provide linkages through the site to the neighbouring Rockville development and the future Glenamuck Link Distributor Road (GLDR). The design layout includes several open spaces available to the public which will provide amenity and biodiversity. The impact of the Proposed Development on landscape in relation to human health will be negligible, neutral, and long term for the operational phase.

### 4.5.3 Potential Cumulative Impacts

The list of cumulative schemes has been detailed in Chapter 2. Cumulative effects are summarised below.

*Table 4-14 Summary of cumulative effects*

Topic	Description
Population demographics	The cumulative schemes along with the Proposed Development will result in an increase in the number of people in the surrounding area through construction and operational employees, future residents and service users (creche, retail, commercial, café, restaurant and community facility). At this stage the number of future residents has not been accurately estimated. The cumulative effects on population demographics will be neutral, moderate and long term.
Socio-economic	The Proposed Development in combination with existing and approved developments will continue to support the local economy both directly and indirectly through job creation and continued support of existing businesses. The cumulative effects on the socio-economic status of the surrounding area will be both direct and indirect, short to long term and positive.
Water quality, noise and vibration, air quality and climate, traffic and transport	Cumulative effects relating to hydrology (water quality), noise and vibration, air quality and climate and traffic and transport have been assessed in their respective chapters. It is expected that the control and mitigation measures implemented through the Proposed Development combined with those associated with the cumulative schemes will ensure there are no long term, negative, significant effects on population and human health.

### 4.5.4 “Do Nothing” Impact

If the Proposed Development did not proceed, the site would remain as a greenfield site and there would be no immediate impact on the existing population or economic activity in the area. This would be an under-utilisation of zoned and serviceable urban lands from a sustainable planning and development perspective.

## 4.6 Avoidance, Remedial and Mitigation Measures

### 4.6.1 Construction Phase

No specific mitigation measures are required during the Construction Phase in relation to population and human health, given the lack of direct, adverse effects resulting from the

Proposed Development. However, mitigation measures in relation to air emissions, noise, traffic, and waste are identified in their respective chapters in this EIAR.

#### **4.6.2 Operational Phase**

No specific mitigation measures are required during the Operational Phase of the Proposed Development in relation to population and human health, given the lack of direct, adverse effects resulting from the Proposed Development. However, mitigation measures in relation to air emissions, noise, traffic, and waste are identified in their respective chapters in this EIAR.

#### **4.6.3 “Worst Case” Scenario**

In the event that mitigation measures fail to minimise and / or prevent potential adverse effects, the following possibilities may occur:

- An increase of traffic within the surrounding roads and junctions of the site.
- An increase in noise caused during the construction phase can cause a disturbance any residential dwellings in close proximity to the site.
- An increase in the production of dust that can be carried throughout the site and create adverse effects on the neighbouring environment.

However, it is imperative that such mitigation measures are implemented to ensure that the worst-case scenario does not occur. When considering the mitigation measures that will be in place, the event of a worst-case scenario is deemed to be unlikely.

### **4.7 Residual Impacts**

Residual Impacts are defined as *“effects that are predicted to remain after all assessments and mitigation measures”*. Based on the fact there are no mitigation measures proposed for population and human health, the residual impacts will be the same as those detailed in Section 4.5 of this chapter.

### **4.8 Monitoring**

No specific monitoring is proposed in relation to population and human health during the construction or operational phase.

### **4.9 Interactions**

#### **4.9.1 Hydrology - Water Quality**

Contamination events can impact the water quality and thus impact the human health of the surrounding population. Appropriate surface water control measures will be implemented as part of the Proposed Development. No public health issues associated with the water conditions at the site have been identified for the Construction Phase or Operational Phase of the Proposed Development.



#### **4.9.2 Air Quality and Climate**

Interactions with air quality during the construction and operational phase has the potential to cause issues relating to dust and traffic emissions impacting human health. However, Chapter 8 has concluded that there will be no significant air quality impacts. All ambient air quality legislative limits will be complied with and therefore the predicted impact is not significant with a neutral effect on human health.

#### **4.9.3 Noise and Vibration**

Construction activities such as site clearance, building construction works, and trucks and vehicles entering and exiting the site have the potential to interact with the surrounding population and human health and cause noise disturbance. The impact assessment of noise and vibration has concluded that additional noise associated with the construction and Operational Phase will not cause a significant adverse effect.

Operational Phase noise impacts have also been assessed in relation to traffic and plant equipment and no significant adverse effects will be experienced. As such, there will be no significant impact on population and human health.

#### **4.9.4 Landscape and Visual**

The Proposed Development will alter the visual appearance of the site which is predominantly a greenfield site excluding the existing buildings to be demolished. It is not considered that the Proposed Development by virtue of its visual appearance and in the context of the proposed zoning of the site of the Proposed Development and the suburban nature of the surrounding landscape, will cause any significant impacts and as such there will be no significant impact on population and human health.

#### **4.9.5 Traffic and Transport**

Construction and operational activities will result in an increased number of HGV and car movements. There is a potential impact on population and human health in relation to the capacity and operation of the surrounding road network. The overall impact of the Proposed Development on the transportation infrastructure in the local area will not be significant and subsequently there will be no significant impact on population and human health.

### **4.10 Difficulties Encountered When Compiling**

Overall, there were no difficulties encountered when compiling this Chapter of the EIAR. All research was conducted through a desk top study.

### **4.11 References**

The Central Statistics Office (CSO)

Dun Laoghaire-Rathdown County Development Plan 2022-2028

Ordinance Survey Ireland (OSI)

WHO. Ottawa Charter for Health Promotion First International Conference on Health

Promotion Ottawa, 21 November 1986 - WHO/HPR/HEP/95.1. 1986.

WHO. Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948. 1946.

Healthy Ireland Framework 2013-2025

Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (European Communities 1999)

Assessment of Health Impacts within National Environmental Regulation Process. Report commissioned by Environmental Protection Agency. Golder Associates. April 2015.