

5 DEMOGRAPHIC PROFILE & HUMAN HEALTH

5.1 Introduction

This Chapter of the EIAR has been prepared by Stephen Little and Associates, Chartered Town Planners and Development Consultants to assess the likely impacts associated with Population and Human Health during the construction and operational phases of the proposed residential development at Readsland, Roestown, Knock, Dunshaughlin, Co. Meath. This chapter evaluates the impacts of the proposed development on demographic profile and human health.

In accordance with the Draft EPA EIA Report Guidelines (2017) and EPA Draft Advice Notes for EIS (2015), this chapter has considered the “existence, activities and health of people” with respect to “topics which are manifested in the environment such as employment and housing areas, amenities, extended infrastructure or resource utilisation and associated emissions”. Issues examined in this

The proposed development will consist of 415no. residential units & ancillary uses within defined residential character areas, and all associated ancillary site development works including road and water services infrastructure, green infrastructure networks and amenity open spaces, all at a site of approximately 14.8 Ha.

In accordance with the Draft EPA EIAR Report Guidance (2017), this chapter has considered that:

“...in an EIAR the assessment of impacts on population and human health should refer to the assessment of those factors under which human health effects might occur, as addressed elsewhere in the EIAR e.g. under environmental factors of air, water soil etc.”

The Guidelines also note: -

“The legislation does not generally require assessment of land-use planning, demographic issues or details socio-economic analysis. Coverage of these can be provided in a separated Planning Application Report to accompany an application for planning permission”

The environmental aspects examined in this Chapter include the following: -

- Chapter 9: Climate (Air Quality and Climate Change).
- Chapter 12: Air (Noise and Vibration).
- Chapter 13: Landscape and Visual Impact.
- Chapter 14: Material Assets (Transportation).

Where these environmental aspects have been assessed.

Issues examined in this chapter include: -

- Demography.
- Population.
- Employment.
- Social Infrastructure.
- Landscape, Amenity and Tourism.
- Natural Resources.
- Air Quality.
- Noise & Vibration.
- Material Assets.
- Traffic.
- Health and Safety.

Where these topics are dealt with in further detail elsewhere in this EIAR Chapter, the relevant Chapters have been cross referenced.

5.2 Assessment Methodology

As per Article 3 of Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU: -

“1. The environmental impact assessment shall identify, describe, and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:

(a) population and human health;

(b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;

(c) land, soil, water, air and climate;

(d) material assets, cultural heritage and the landscape;

(e) the interaction between the factors referred to in points (a) to (d).

2. The effects referred to in paragraph 1 on the factors set out therein shall include the expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned.”

A 2017 publication by the European Commission, Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report, considered that: -

“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.”

This chapter will follow these EC guidelines, and will examine the health effects relevant to the proposed development as they relate to a relevant, defined study area. The effects of the proposed development on the population and human health are analysed in compliance with the requirements of the EPA Draft EIA Report Guidelines 2017.

5.2.1 Assessment of Significance & Sensitivity

The assessment of significance is a professional appraisal based on the sensitivity of the receptor and the magnitude of effect.

Within any area, the sensitivity of individuals in a population will vary. As such, it would be neither representative of the population, nor a fair representation of the range of sensitivities in a population, were an overall sensitivity classification assigned to the population in question. As such, the precautionary principle has been adopted for this assessment, which assumes that the population within the study area is of a uniformly high sensitivity.

5.2.2 Magnitude of Impact

The magnitude of predicted impacts has been quantified in this assessment using the terms outlined in Table 5.1 below: -

Magnitude	Description of Magnitude
High	Change in an environmental and/or socio-economic factor(s) as a result of the proposed development which would result in a major change to existing baseline conditions (adverse or beneficial)
Medium	Change in an environmental and/or socio-economic factor(s) as a result of the proposed development which would result in a moderate change to existing baseline conditions (adverse or beneficial)
Low	Change in an environmental and/or socio-economic factor(s) as a result of the proposed development which would result in a minor change to existing baseline conditions (adverse or beneficial)
Negligible	Change in an environmental and/or socio-economic factor(s) as a result of the proposed development which would not result in change to existing baseline conditions at a population level, but may still result in an individual impact (adverse or beneficial)
No change	No change would occur as a result of the proposed development which would alter the existing baseline conditions (adverse or beneficial)

Table 5.1: Description of magnitude of predicted impacts.

5.2.3 Significance of Effects

The assessment of significance of effects in this assessment is a professional appraisal and has been based on the relationship between the magnitude of effects (Section 5.2.2) and the sensitivity of the receptor. Table 5.2 below provides a matrix on the measure of the significance of effects based on these parameters.

		Magnitude of Impact			
		Negligible	Low	Medium	High
Sensitivity of Receptor	Negligible	Negligible	Negligible or Minor	Negligible or Minor	Minor
	Low	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
	Medium	Negligible or Minor	Minor	Moderate	Moderate or Major
	High	Minor	Minor or Moderate	Moderate or Major	Major

Table 5.2: Matrix illustrating the significance of effects as determined by the relationship between the magnitude of impact and the sensitivity of receptors.

5.3 Receiving Environment

The lands are irregularly shaped and comprise two distinct sites that are bisected by the Dunshaughlin Link Road and Drumree road. The greenfield lands have a total area of c 14.8 ha with gradual fall gently in topography from north to south.

The proposed development is set out in three character areas. Character Areas 3 & 4 (c. 8.47 Ha) are generally bounded to the east by the existing Dunshaughlin Link Road, to the south and east by lands zoned for open space, to the north by Phase 1 lands (currently under construction by the Applicant) and lands identified for neighbourhood centre use which will ultimately accommodate a local centre providing local convenience and service uses.

Character Area 6 (c. 3.75 Ha) comprises a greenfield site which lies north of Drumree Road and to the west of the Dunshaughlin Link Road. A single private dwelling adjoins the subject site along the south eastern boundary.

The application site is located within close proximity to Dunshaughlin Town Centre lies c. 1km m to east of the site and all the associated amenities supermarkets, restaurants, pharmacies, schools and sports facilities, childcare facilities, primary health centre, and library are within walking distance.

5.3.1 Study Area

The study area selected for the assessment of the impact on the demographic profile and human health as a result of the proposed development was defined as the Electoral Divisions (ED) of Dunshaughlin (ED 11010).

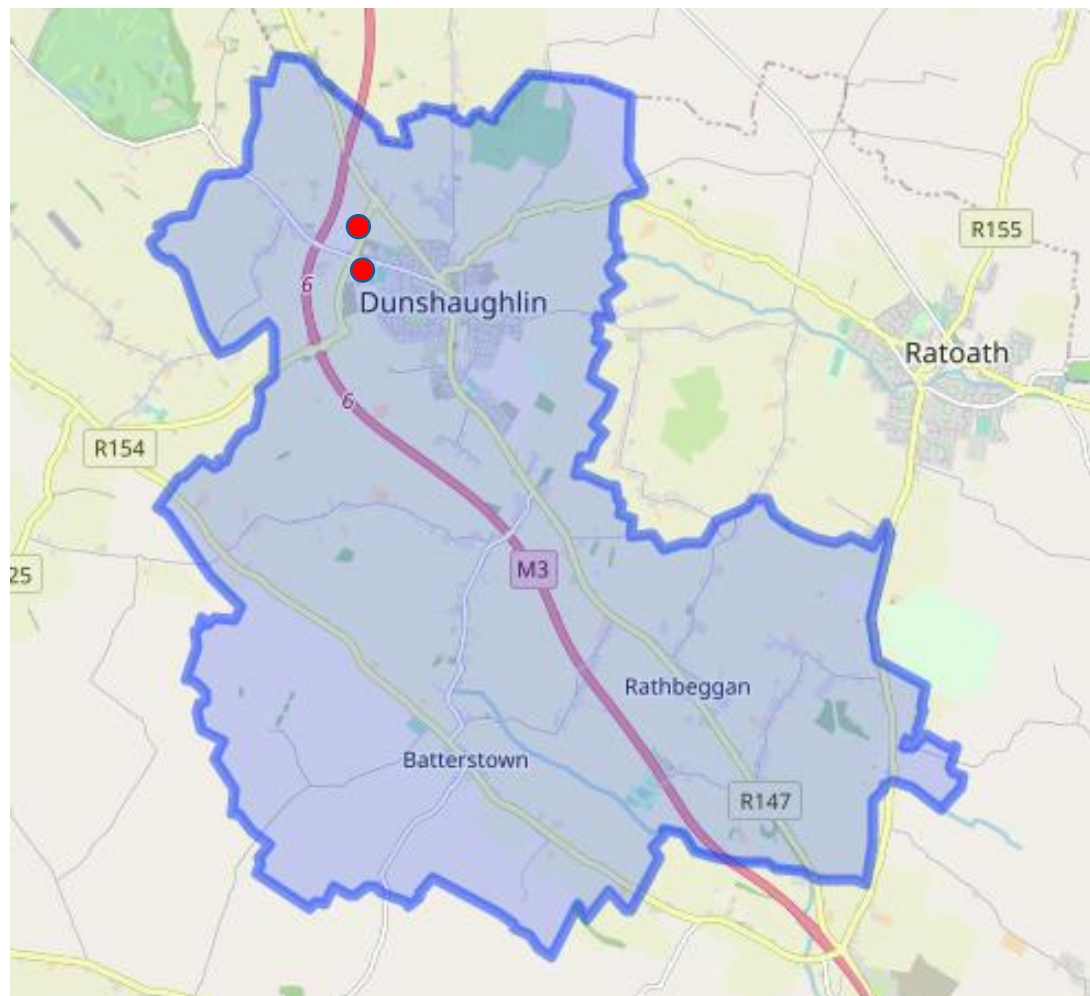


Figure 5.1: Map illustrating the selected study area for the Proposed Development subject site outlined indicatively with 2no. red dots.

5.3.2 Existing Baseline Conditions

5.3.2.1 Population and Demographics

The most recent census of population was carried out by the CSO on the 24 April 2016. The previous census was completed on the 10 April 2011 and before that on 23 April 2006. The census compiles data for the whole state as well as smaller individual areas including counties, cities, towns and electoral divisions. Taking into consideration the location of the proposed development, the census information on population, age profile, employment and social class, has been analysed in relation to the Meath County Council Region.

The latest census data shows that the population in the Meath County Council (MCC) area grew by 5.9% between the years 2011 and 2016 compared with 3.8% nationally. The average rate of population growth across the Study Area was 7.2 %, the electoral division for the site, Dunshaughlin, saw a lower rate of growth with an increase of 2.9% (Table 5.3). Projections for the national and the county populations are predicted to continue this trend of moderate to high population growth into the short-term future.

Area	2011	2016	% Change 2011-2016
State	4,588,252	4,761,865	+ 3.8%
Meath County	184,135	195,044	+ 5.9%
Dunshaughlin	5,676	5,840	2.9%

Table 5.3: Population change at National, primary and secondary hinterland level from 2011 – 2016 (Source: www.cso.ie).

Age Profile

The age profile of the population in the area is an important parameter as it provides a good insight into the potential labour force, the demand for schools, amenities, other facilities and the future housing demand.

Table 5.4 shows the age profiles Nationally for 2016.

Area	0-14	15-24	25-44	45-64	65+	Total Persons
State	21%	12%	30%	24%	13%	4,761,865
Meath County	25%	11%	29%	23%	11%	195,044
Dunshaughlin	22%	14%	25%	27%	12%	5,840

Table 5.4: Age profile at National and County level 2016 (Source: www.cso.ie).

This table shows that both Nationally and the County Meath area, the dominant age grouping is 25 – 44 at 30% and 29% of the total population, respectively. In the Dunshaughlin ED, the 45–64 age group is the contains the largest percentage of the population with 27%. The figures for both Meath County and the Study Area indicate a young working age population in the area which is above the national level. This is in keeping with census data from 2011 and 2006.

5.3.2.2 Socio-Economics

Employment

Table 5.5 presents the employment statistics in 2016 compared with 2011. The data shows that unemployment decreased significantly in the County, as well as nationally, reflecting the economic recovery in recent years.

	At Work	Looking for first regular job	Unemployed having lost or given up previous job	Total in labour force	% Unemployment
2011 Labour Force					
State	1,807,360	34,166	390,677	3,608,662	11.8
Meath	74,342	1,137	15,155	137,669	11
2016 Labour Force					
State	2,006,641	31,434	265,962	3,755,313	7.9
Meath	83,259	1,092	9,431	146,113	6.5

Table 5.5: Employment statistics Nationally and at County level in 2011 and 2016 (Source: www.cso.ie).

The 2016 census data shows that the majority of people in employment in the Meath County Council (MCC) area are in 'Managerial and Technical' employment (30.5%) with the least represented social class being 'Unskilled' workers at (3.6%). Table 5.5 presents the employment statistics in 2016 compared with 2011.

At a local level, the dominant social class in the Dunshaughlin Electoral Division is 'Managerial and Technical' labour (38.1%) with 'Unskilled' being the lowest representative (2.1%).

Education

Census data presenting the highest level of education completed by people living in the Study Area community and Meath County is presented in Table 5.6. The data show that there are higher levels of educational attainment in the Study Area than in Meath County.

Area	No formal Education	Primary Education	Upper Secondary	Honours Bachelor's Degree, Professional qualification or both	Postgraduate Diploma or Degree	Total Persons
Meath County	1.4 %	9.6%	20%	10%	7.8%	121,379
Dunshaughlin	1%	6.3%	20.6%	12.6%	10.3%	3,697

Table 5.6: Highest level of education completed locally and at County level in 2016 for key educational levels. (Source: www.cso.ie) (Note: the table presents key milestone education levels and excludes lower secondary, technical or vocational qualification, advanced certificate/completed apprenticeship, higher certificate, ordinary bachelor degree/national diploma, Ph.D./higher or where information was not stated).

Labour Force Survey

The Labour Force Survey (LFS) is a large-scale, nationwide survey of households in Ireland carried out every three months. It generates labour force estimates which include the official measure of employment and unemployment for the state.

The results Nationally for Q1 2020 showed that there were 2,070,371 (figure estimate adjusted for Covid-19) people employed in the State with the monthly figures showing 139,200 registered as unemployed. This represents a 2.0% increase in employment between Q2 2018 and Q2 2019.

In Q2 2019, the majority of people were employed in the wholesale and retail trade and repair of motor vehicles and motorcycles sectors, with industry, and human health and social work activities following closely.

Income

The below data, obtained from CSO Statbank (CIA01), demonstrates that the levels of total income per person in the Meath are higher than that within the State. In 2015, the total income per person in the Meath was 5% higher than that within the State in 2015.

	2010	2011	2012	2013	2014	2015
Meath	26,374	24,358	25,039	24,197	25,019	26,833
State	24,840	24,596	25,273	24,910	25,388	26,698

Table 5.7: Total Income per Person (Euro) for Meath and the State (Source: CSO Statbank CIA01).

A similar pattern of income distribution is observed in data on disposable income per person, where in the Meath area the disposable income per person was 5% higher than that of in the State in 2015.

	2010	2011	2012	2013	2014	2015
Meath	20,308	18,399	18,820	18,046	18,556	20,086
State	19,558	18,889	19,429	18,898	19,265	20,334

Table 5.8: Total Disposable Income per Person (Euro) for Meath and the State (Source: CSO Statbank CIA01)

Deprivation

Deprivation in small areas is mapped using the Pobal HP Deprivation Index. This Index draws on data from censuses and combines three dimensions of relative affluence and deprivation: Demographic Profile, Social Class Composition and Labour Market Situation. Figure 5.2 below shows graphical representation of how the concepts of Demographic Growth, Social Class Composition and Labour Market Situation are measured by ten key socio-economic indicators from the Census of Population. In this EIA Report, the Relative Index Score is considered as the measure for deprivation, as these Relative Index Scores are rescaled such that the mean is 0 and standard deviation is 10 at each census wave. This allows for the provision of descriptive labels with the scores, which are grouped by standard deviation as seen in Table 5.9 below.

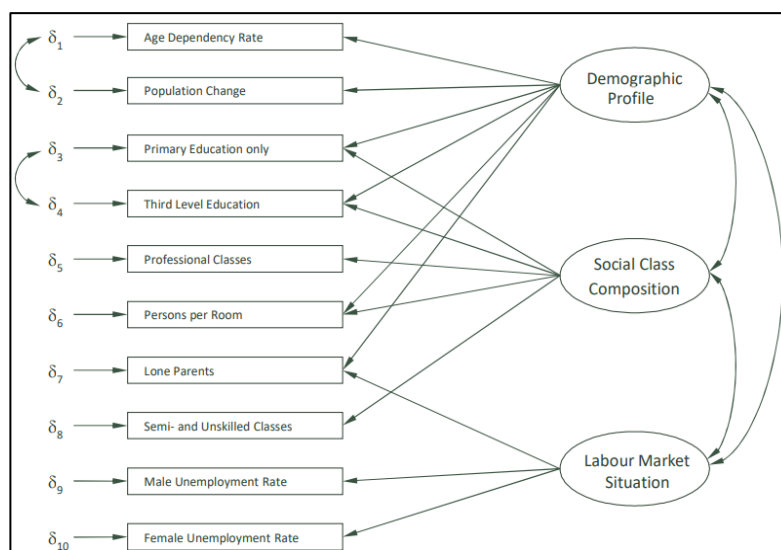


Figure 5.2: Graphical representation of how the concepts of Demographic Growth, Social Class Composition, and Labour Market Situation are measured by ten key socio-economic indicators from the Census of Population.

Relative Index Score	Standard Deviation	Label
> 30	> 3	Extremely affluent
20 – 30	2 – 3	Very affluent
10 – 20	1 – 2	Affluent
0 – 10	0 – 1	Marginally above average
0 – -10	0 – -1	Marginally below average
-10 – -20	-1 – -2	Disadvantaged
-20 – -30	-2 – -3	Very disadvantaged
< -30	< -3	Extremely disadvantaged

Table 5.9: Pobal HP Index Relevant Index Score labels (Source: Pobal HP Deprivation Index)

The data in Table 5.10 show that the population living within the Study Area are generally classified as ‘Marginally above average’, with a Relative Index Score of 8.1. By comparison, the population within county Meath are generally classified as ‘Marginally above average’ with a Relative Index Score of 4.12. Figure 5.3 below presents the Pobal HP Index map illustrating the Study Area.

Area	Relative Index Score	Pobal HP Description 2016
Meath	6.39	Marginally above average
Dunshaughlin	6.39	Marginally above average

Table 5.10: Pobal HP Index Relevant Index Score Figures at a local and County level (Source: Pobal HP Deprivation Index).

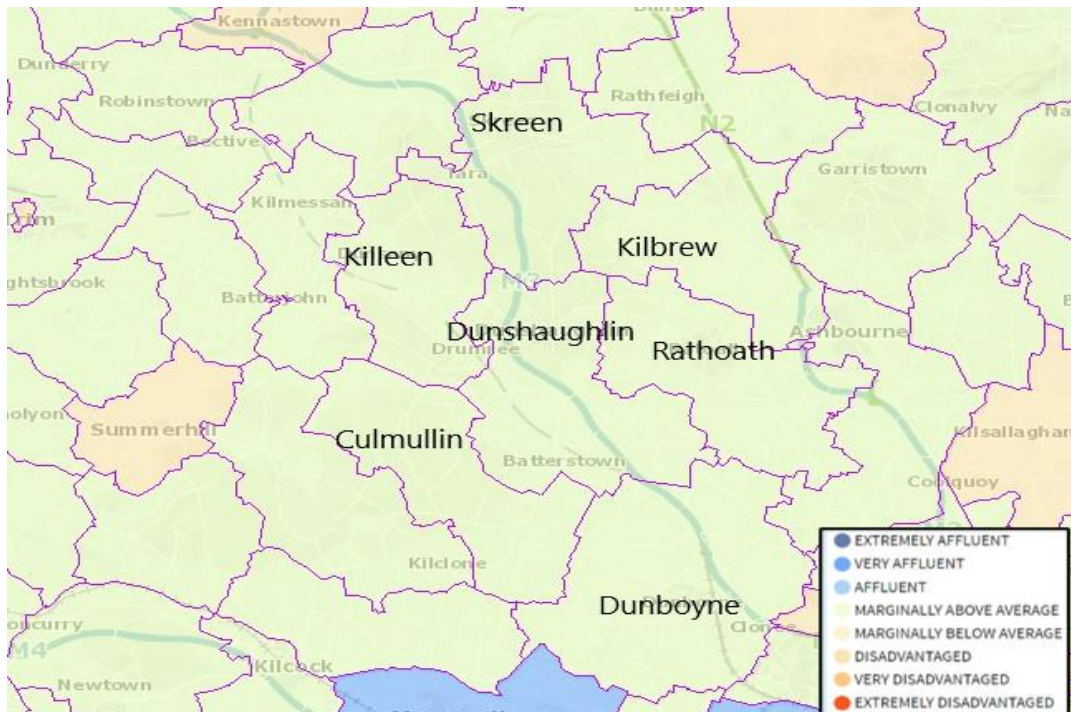


Figure 5.3: Pobal HP Index maps illustrating the Study Area (Source: Pobal HP Deprivation Index)

5.4 Characteristics of the Proposed Development

The site is located in c. 1km west of Dunshaughlin town centre. The two distinct sites measure c. 14.8 Ha which is currently in use for agricultural purposes, the two distinct sites within the eastern part of the Dunshaughlin Local Area Plan (LAP) and are bisected by Drumree Road and Dunshaughlin Link Road and comprise a total area of c. 14.8 Ha (which includes the lands zoned F1 – Open Space). Character Areas 3 & 4 (c. 6.4 Ha) are generally bounded to the west by the existing Dunshaughlin Link Road, to the south and east by lands zoned for open space, to the north by Phase 1 lands (currently under construction by the Applicant (MCC Reg Ref. DA/120987/ABP Ref. PL17.241988)

Character Area 6 (c. 3.6Ha) comprises a greenfield site which lies the north of Drumree Road and to the west of the Dunshaughlin Link Road. A single private dwelling adjoins the subject site along the south eastern boundary.

In summary, the proposed Strategic Housing Development broadly comprises: -

- 415no. residential units (254no. houses, 55no. duplex and 106no. apartments) in buildings ranging in height from 2 to 5-storeys.
- 1no. childcare facility (c. 409 sq. m gross floor area).
- Provision of access from Drumree Road (Character Area 6) and Dunshaughlin Link Road – R125 (Character Areas 3 & 4) and provision of internal road network including pedestrian and cycle links.
- Provision of public open space including facilitation of planned pedestrian and cyclist connection along River Skane Greenway toward Dunshaughlin Town Centre.
- Provision of wastewater infrastructure including connections to main sewers on Drumree Road and to foul networks in permitted Phase 1 development and provision of SuDS infrastructure.
- All associated and ancillary site development and infrastructural works, hard and soft landscaping and boundary treatment works.

A full project description is provided in Chapter 3: Description of Proposed Development.

5.5 Potential Impact of the Proposed Development

5.5.1 Proposed Development

5.5.1.1 Construction Phase

Population

The construction phase is considered unlikely to result in a significant increase or decrease to the local population. Construction workers would be anticipated to travel from their existing residence as opposed to using temporary accommodation in the local area. There will, however, be a short term increase in the local working population during the construction phase of development.

During the construction works there will be an increase in the number of people working in the local area before, during and after the anticipated site working hours. There is also the potential for some of the construction workers to move into the area to be closer to their workplace. The number of workers is expected to be around 200, and therefore the number present during these hours or that move to the area will not be a high proportion of the total population and therefore is not likely to lead to a significant increase in the number of people in the area. Therefore, the increase in population numbers during the construction phase is not likely to be significant.

The impact on the local population is considered to be neutral, imperceptible and temporary in nature, therefore the impact is not considered to be significant.

Economy

The construction of the proposed scheme will result in direct employment within the construction and related sectors throughout the construction period. This is likely to lead to direct and indirect benefits for the local area as the increase in the number of workers will result in more people being in the area during the daytime. These workers are likely to increase the level of consumption in the area and therefore it is likely there will be a modest increase in income for local shops and services during this time. As a secondary effect this increase in income may lead to an increase in spending by these businesses in the local area therefore sharing the incoming spending. However, the number of construction workers and new jobs is not likely to be a significant proportion of the existing population of the area. Therefore, the amount of new trade and therefore spending is likely to be small and insignificant as a proportion of standard turnover levels. Therefore, the effects on employment and economic activity during the construction phase are likely to lead to a slight positive effect over a small area which is temporary and short term in duration.

Human Health

Some of the potential health effects likely to occur during construction are based on and within other technical disciplines covered within this EIAR. Therefore, the impact sections of each Chapter should be reviewed to gain a full understanding of the potential effects on human health as a result of the construction activities. A summary of these potential impacts are outline below.

Climate (Climate & Air Quality)

As detailed in Chapter 9: Climate (Air Quality and Climate Change), best practice mitigation measures are proposed for the construction phase of the proposed development which will focus on the pro-active control of dust and other air pollutants to minimise generation of emissions at source. The mitigation measures that will be put in place during construction of the proposed development will ensure that the impact of the development complies with all EU ambient air quality legislative limit values which are based on the protection of human health. Therefore, the impact of construction of the proposed development is likely to be negative, short-term and imperceptible with respect to human health.

Construction phase impacts on human health due to construction phase vehicles and plant are predicted to be imperceptible as volumes fall below the scoping levels for impact, as discussed in Chapter 9: Climate (Air Quality and Climate Change).

Air (Noise & Vibration)

Exposure to Excessive noise is becoming recognised as a large environmental health concern. According to the 2015 European Commission report 'Noise Impacts on Health', (European Commission, 2015), the most common effects of noise on the vulnerable include: -

- Annoyance.
- Sleep Disturbance.
- Heart and circulation problems.
- Quality of Life.
- Cognitive Process.
- Hearing.

It is acknowledged that humans are particularly sensitive to vibration stimuli and that any perception of vibration may lead to concern. In the case of road traffic, vibration is perceptible at around 0.5mm/s and may become disturbing or annoying at higher magnitudes.

It is predicted that the construction programme will create typical construction activity related noise on site. During the construction phase of the proposed development, a variety of items of plant will be in use, such as excavators, lifting equipment, dumper trucks, compressors and generators.

Potential for vibration impacts during the demolition and construction phase programme are likely to be limited given the distances to the receptor locations. With respect to the potential vibration impact, the only significant source of vibration is expected to be due to excavations and foundation activities. However, the distance between the areas where these activities are to occur and the nearest noise sensitive locations are such that all vibration transmission would be below recommended guideline criteria. Vibration levels are also expected to be below a level that would cause disturbance to building occupants

Traffic

The potential impact caused by the traffic generated during the construction phase of the development is assessed in chapter 14 Material Assets (Transportation). The World Health Organisation Report 'Health Effects and Risks of Transport Systems: The Hearts Project' (World Health Organisation, 2006) states that road traffic is a major cause of adverse health effects – ranking with smoking and diet as one of the most important determinants of health in Europe. The report states: -

“Traffic-related air pollution, noise, crashes and social effects combine to generate a wide range of negative health consequences, including increased mortality, cardiovascular, respiratory and stress-related diseases, cancer and physical injury. These affect not only transport users but also the population at large, with particular impact on vulnerable groups such as children and elderly people, cyclists and pedestrians.”

The number of construction vehicle movements generated by the proposed development is low compared to the number of vehicular trips to be generated by the proposed development during the operational phase. Further, it is predicted that the majority of traffic generated by the construction activities will take place outside of the AM and PM peak periods and therefore no significant adverse impact on traffic is predicted.

Care will be taken to ensure that the existing pedestrian and cycling routes are suitably maintained or appropriately diverted if and where necessary during the construction period. It is likely that construction will have a slight temporary effect on pedestrian and cycle infrastructure.

An assessment of the additional traffic movements associated with the proposed development during the construction and operational phases is presented in Chapter 14: Material Assets (Transportation).

Townscape & Visual

The report 'Health Impacts on the Built Environment: A Review' (The Institute of Public Health in Ireland, 2006) states that deteriorating physical features of the urban environment can harm health. Architecture Ireland have also shown the link between the Built Environment and Mental Health (Architecture Ireland, 2015). The World Health Organisation (WHO) has undertaken research that show urban environments that are aesthetically pleasing and landscaped encourage people to explore and access their local community by foot or bicycle when compared to the same urban space prior to renovations (WHO, 2016).

There will be moderate negative townscape impacts during the construction stage of the proposed development due to the use of scaffolding, construction cranes, hoardings etc, however these will be short term in duration. Visual impact on the local area will also be considered to be negative but similar to above will be short term in duration. Further discussion of visual impacts are included in Chapter 13: Landscape and Visual Impact.

5.5.1.2 Operational Phase

Population

The operational phase of the proposed development will result in a development of 415no. residential units alongside ancillary units. The proposed development will provide accommodation for approximately 1,120no. persons in the area. The proposed development will accommodate a portion of the planned population growth of the Dunshaughlin. The proposed development will therefore have a *positive, significant and permanent* impact on the local population. The associated additional local spending will likely have a *positive, moderate and long-term* impact on the economic activity in the area.

Economy

The proposed development will result in a significant and positive impact to local residents in the area. The provision of the 415no. residential units will substantially add to the residential accommodation availability of the area and cater to the increasing housing demand. There will be a varied mix of residential opportunities provided which will be of direct benefit, allowing a diverse range of community to work and live within the town.

It is predicted that there will be a positive impact on local business activity during the operational phase with residents of the proposed development availing of local facilities.

Therefore, the proposed development is likely to have a long term, moderate positive effect on the local area in relation to employment and economic activity.

Human Health

The inclusion of some green space amongst the residential part of the development and a significant network of pedestrian / cycle infrastructure will increase the availability of exercise activities. This will encourage residents and visitors to move around the site therefore giving a greater level of physical activity improving the physical health of the local people whilst also improving the levels of mental health and wellbeing.

The operation of the proposed development will therefore have a long term, moderate positive effect on residents and visitors.

Climate (Climate & Air Quality)

The impact of the proposed development has been assessed by modelling emissions from the traffic generated as a result of the development. The impact of NO₂ emissions for the opening and design years was predicted at the nearest sensitive receptors to the development. This assessment allows the significance of the development, with respect to both relative and absolute impacts, to be determined.

The results of the modelling indicate that the overall impact of NO₂ concentrations as a result of the proposed scheme is long-term, negative and imperceptible.

Air (Noise & Vibration)

Noise levels associated with any mechanical and electrical plant required to service the development buildings will operate well within the adopted day and night-time noise limits at the nearest noise sensitive properties taking into account the site layout, distance to nearest off site noise sensitive locations and the development type which is largely residential. Any plant associated with units will be controlled to ensure a neutral noise impact. Assuming the operational noise levels do not exceed the adopted design goals included within the EIAR, the resultant residual noise impact from this source will be of neutral, minor, long term impact. Chapter 12: Air (Noise and Vibration) outlines all Operational Phase noise and vibration impacts.

The primary potential sources of noise and vibration during the operational phase of the proposed development are as a result of traffic related noise increases which are deemed long-term to permanent; plant noise which are deemed long-term to permanent; and, the inward noise impact of road traffic on to the development itself which is deemed long-term to permanent.

Traffic

As outlined in the summary Traffic Impact Assessment included in Chapter 14: Material Assets (Transportation), the impact of the proposed development on junctions assessed will be neutral. The proposed development will have a positive impact on the pedestrian and cycle amenities in the area. As a result of the proposed development the existing pedestrian and cycle facilities will be upgraded along the L2088 road to join Phase 1 infrastructure upgrade works on Drumree Road. More, new high standard pedestrian and cycle facilities will be constructed to link future and existing neighbourhoods in the area.

Townscape & Visual

Completed housing areas and open space would have a maintenance regime in place to maintain all landscaped areas. Replacement planting would be installed as required during the defects liability period and thereafter by the local management of the development. The proposed development will incorporate the existing retained natural features such as the Skane River and sections of mature hedgerows (See Tree File Tree Protection Plan). The landscape design for the area around the Skane includes the use of native species that will enhance the river side setting and integrate the natural feature into the development. Significant native species hedgerow planting and native species woodland planting will create a strong planted edge to the R125 roadway screening views into the site. (See Doyle + O'Troithigh Landscape Masterplan Drawings) and this planting will enhance the development and assist the integration of the site into the landscape of the wider area.

5.5.1.3 Do-Nothing Impact

If the proposed development were not to proceed, no construction would take place on the site, and there would be no potential for the positive impacts of increased housing supply, and there would be a neutral effect on the environment. If the proposed development were not to proceed it is likely that the lands would be developed in time for another development in line with the zoning of the site.

5.5.2 Cumulative

The cumulative effect of the proposed development alongside other development due to take place in the area will be long term, significant and positive.

5.5.3 Health & Safety

The proposed development has been designed in accordance with the Safety, Health and Welfare at Work Act 2005 (S.I. 10 of 2005) as amended and the Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. 299 of 2007) as amended and associated regulations. The proposed development has been designed by skilled personnel in accordance with internationally recognised standards, design codes, legislation, good practice and experience based on a number of similar existing facilities operated by the operator.

The proposed development has the potential for an impact on the health and safety of workers employed on the site, particularly during the construction phase. The activities of contractors during the construction phase will be carried out in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 of 2013) to minimize the likelihood of any impacts on worker's health and safety.

5.6 Mitigation Measures (Ameliorative, Remedial or Reductive Measures)

There are no specific mitigation measures proposed for Human Health. Mitigation measures proposed to minimise the potential impacts on human health in terms of air quality, landscape & visual impact and noise & vibration are discussed in the relevant sections of Chapters 9: Climate (Air Quality and Climate Change), Chapter 12: Air (Noise & Vibration) and Chapter 13: Landscape & Visual Impact respectively.

Chapter 14: Material Assets (Transportation), addresses mitigation measures proposed to reduce the impact of additional traffic movements to and from the development.

5.7 Residual Impact of the Proposed Development

5.7.1 Proposed Development

5.7.1.1 Construction Phase

Effects on population and health during the construction phase are expected under different environmental topics and will be mitigated as described in the other relevant chapters throughout this EIAR. Once mitigation measures have been implemented the residual effects are expected to be limited to minor or insignificant levels as described in other associated residual impacts sections relating to the construction phase.

5.7.1.2 Operational Phase

The effects for an increase in population as a result of the operational phase are expected to be positive, long term and significant. No mitigation measures are expected during operation of the proposed development that would alter the anticipated impacts therefore they remain as described.

As above, potential effects to human health are considered elsewhere in this EIAR and the discussion will not be repeated in this Chapter. Following the implementation of the mitigation measures described in the respective Chapters, the operational effects on human health are not expected to be significant.

5.7.1.3 Worst-Case Impact

The precautionary principle has been applied throughout this assessment and as such the worst-case scenario has been accounted for.

5.8 Monitoring

There is no specific monitoring required for Human Health during the construction or operational phase of the proposed development. Where monitoring is required for any environmental aspect, this is addressed in the individual Chapters of the EIAR, as appropriate.

5.9 Reinstatement

This is not applicable to this Chapter of the EIA. As the proposed development is a residential scheme and the land is not currently being used reinstatement methods at this time would be irrelevant.

5.10 Difficulties Encountered

There were no difficulties encountered during the production of this Chapter of the EIA.

