

## **5. POPULATION & HUMAN HEALTH**

### **5.1 Introduction**

This Chapter examines the potential socio-economic impact of the construction and operation of the proposed residential development on those residing and working in the vicinity of the proposed development.

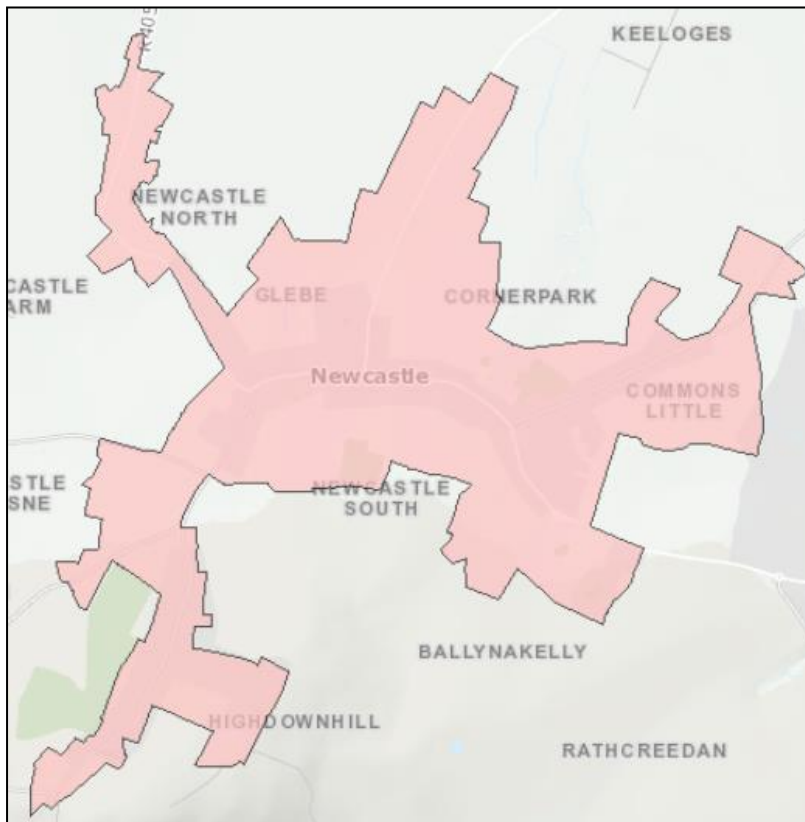
Issues associated with human beings are varied and cover a broad spectrum of topics associated with the existence, activities and wellbeing of people as groups or 'populations'. Whilst most developments will affect people in some form or way, this chapter of the EIAR focuses on those topics which are manifested in the environment, such as demographic change, impacts on community facilities, and on the economy. Actual and perceived impact of the proposed development on human beings and human health may also arise from a number of elements of the proposal. These impacts are dealt with throughout the EIAR, and in particular, the following chapters:

- Landscape & Visual;
- Roads & Traffic;
- Air Quality & Climate;
- Noise & Vibration; and
- Material Assets.

### **5.2 Methodology**

#### **5.2.1 Study Area**

The study area upon which the socio-economic impact of the proposed development is assessed is based on the settlement of Newcastle, South Dublin.

**Figure 5.1 Study Area – Settlement of Newcastle**

(Source: CSO, Census 2016 Small Area Population Statistics Interactive Map)

### 5.2.2 Socio Economic Characteristics

Assessments of key demographic and socio-economic characteristics of the residential population within the study area were undertaken. This was completed in order to build up profiles of the communities that would likely be directly impacted upon by the proposed development. A desk-based assessment of socio-economic aspects considered relevant to the proposed housing development was carried out as part of the assessment. The desk-based assessment has been undertaken based on information from the following principal data sources:

- Central Statistics Office (CSO) Census of Population including Preliminary CSO Results 2016
- Regional Planning Guidelines for the Greater Dublin Area 2010-2022
- Eastern & Midland Regional Assembly Draft Regional Spatial & Economic Strategy 2018
- South Dublin County Development Plan 2016-2022
- Newcastle Local Area Plan 2012-2022

A site visit to the proposed development site and the surrounding area was also undertaken.

### 5.3 Receiving Environment – The Baseline Situation

This section describes the receiving environment in terms of the existing context, character, significance and sensitivity, which forms the baseline for assessing the likely potential effects of the proposed development.

#### 5.3.1 Site Location & Context

The proposed development site comprises of a Main Development Area of approximately 15 hectares of greenfield development lands located south of Main Street, as well as three infill development areas, consisting of uncompleted elements of previously permitted development under Reg. Ref. SD05A/0344 (PL06S.217096), equating to an overall proposed development site area of 16 hectares. The Main development Area is irregular in shape. The majority of the site has been previously disturbed with site preparation works associated with development originally permitted under Reg. Ref SD05A/0344 (PL06S.217096) but never completed. At the north-west corner of the Main Development Area, there are 2 no. habitable dwellings and 2 no. associated sheds and an outbuilding which are proposed to be demolished.

The northern boundary of the site primarily adjoins residential gardens with two areas of road frontage onto Main Street, the R120, linking the M4 motorway with the N7 national primary route. The eastern boundary is characterised by two- and three- storey dwellings which form part of the original permission for the site, Reg. Ref. SD05A/0344 (PL06S.217096). The western boundary is primarily formed of agricultural lands which are zoned for future new residential. The southern boundary is characterised by agricultural lands.

The balance of the proposed development site comprises of 3 no. infill development areas, The Ballynakelly Site is an infill development area which forms part of the Ballynakelly housing development which had not been completed. The development area measures approximately 0.80ha in area and falls from south to north. The development area is bound by an open space at Burgage Green to the north, residential development of Parsons Green to the east, Newcastle Boulevard to the south and Burgage Street to the west.

The Ballynakelly Rise development area is located to the south-east of the Main Development Area and immediately adjacent to existing properties onto Ballynakelly Rise. The development area measures approximately 0.18ha consisting of part of an undeveloped land parcel which has been grassed over.

The Ballynakelly Edge (development area is located to the south-east of the Main Development Area and west of Ballynakelly Rise. The site measures approximately 0.05ha and includes a community building, which was never fully completed or occupied

The R120, Main Street, forms the core of Newcastle, providing for two-way traffic through the main centre of Newcastle. To the west, this road connects with the R405 and onwards to the M4 motorway while to the east the R120 connects to the N7 national primary route.

#### 5.3.2 Population Trends for the Local Area

The Central Statistics Office (CSO) provides data on population and socio-economic aspects of the population at different levels from the entire state, county level and individual Electoral Districts within each County.

The proposed development site falls within the Electoral District (ED) of Newcastle within the administrative area of South Dublin County Council. The most recent census of population by the CSO was undertaken in 2016. The census provides demographic trends for the region, county, town and local levels.

The CSO population statistics relevant to this EIS are set out in the table below.

**Table 5.1: Population Change 1996-2016**

Area	Number of Persons								
	1996	2002	% Change	2006	% Change	2011	% Change	2016	% Change
Ireland - State	3,626,087	3,917,203	8.0%	4,239,848	8.2%	4,588,252	8.2%	4,761,865	3.8%
Co. Dublin	1,058,264	1,122,821	6.1%	1,187,176	5.7%	1,273,069	7.2%	1,347,359	5.8%
South Dublin	218,728	238,835	9.2%	246,935	3.4%	265,174	7.4%	278,767	5.1%
Newcastle	1,289	1,160	-10%	1,508	30%	2,659	76.33%	3,093	16.3%

\* 80 legal towns were abolished under the Local Government Reform Act 2014. Census towns which previously combined legal towns and their environs have been newly defined using the standard census town criteria (with the 100 metres proximity rule). This has resulted in a change of the area and population of the town, compared with previous computations.

According to the 2016 Census of Population, the population of the State showed a steady growth of around 8.2% from its 2002 level until 2011, with a significant reduction in growth during the period between 2011 and 2016 to 3.8%. It is noted that population growth rate within South Dublin County has fluctuated over the same period, with a higher rate of growth recorded for the period 2011-2016 at 5.8% compared with 3.8% for the State. After population decline over the period 1996 to 2002, Newcastle has experienced growth at rates much higher than the State and South Dublin from 2006 onwards, most notably in 2011 at 76.33%. Between 2011 – 2016 Newcastle experienced 16.3% growth, higher than both South Dublin County and the State but a significantly lower rate than the previous Census period. The change in growth in Newcastle coincides with higher or lower building outputs, with very little new development occurring between 2011-2016 due to the economic downturn.

Strong population growth for South Dublin is indicative of its strategic location providing good access to Dublin City Centre, alongside significant employment opportunities in the county. Primarily this growth can be attributed to greater economic activity, increased job opportunities and continued migration.

The population of Newcastle has grown considerably by almost 140% since 1996. There were two periods of significant growth, c.2006 and c.2011 with subsequent population growth decreasing but remaining higher than both the State and South Dublin. Newcastle has usually experienced higher levels of growth than the State as a whole, likely because of its connections to Dublin city and other economic centres. Since the economic downturn there has been a significant reduction in the growth of Newcastle, which could be attributed to some extent to the lack of housing delivery in the area over this period, with growth in population during this time likely to be attributed to development outside the town boundary.

### 5.3.3 Population Structure

The 2016 Census results for Newcastle are compared to that of the State and South Dublin County in terms of population structure by age in Table 5.2 below.

**Table 5.2 Population by Age Group as % of Total Population**

Geographic Area	State		South Dublin		Newcastle	
	No. of Persons	% of Total	No. of Persons	% of Total	No. of Persons	% of Total
00-04	331,515	6.96	21,733	7.80	320	10.35
05-09	355,561	7.47	22,765	8.17	343	11.09
10-14	319,476	6.71	19,590	7.03	206	6.66
15-19	302,816	6.36	18,027	6.47	136	4.40
20-24	273,636	5.75	16,120	5.78	85	2.75
25-29	297,435	6.25	18,103	6.49	150	4.85
30-34	361,975	7.60	23,272	8.35	333	10.77
35-39	389,421	8.18	25,213	9.04	414	13.39
40-44	357,460	7.51	20,951	7.52	308	9.96
45-49	326,110	6.85	17,697	6.35	168	5.43
50-54	299,935	6.30	15,824	5.68	99	3.20
55-59	270,102	5.67	14,819	5.32	105	3.39
60-64	238,856	5.02	13,728	4.92	117	3.78
65-69	211,236	4.44	11,864	4.26	129	4.17
70-74	162,272	3.41	7,913	2.84	89	2.88
75-79	115,467	2.42	5,396	1.94	57	1.84
80-84	81,037	1.70	3,347	1.20	20	0.65
85+	67,555	1.42	2,405	0.86	14	0.45
<b>Totals</b>	<b>4,761,865</b>		<b>278,767</b>		<b>3,093</b>	

(Source: CSO, Census 2016)

Based on age comparisons of the 2016 Census, Newcastle has a high proportion of its population in young age brackets. Newcastle has a higher proportion of its population in the 0-4 and 5-9 age brackets than either South Dublin or the State. Between 10-14 and 15-19, the proportion of Newcastle's population is lower than both the State and South Dublin.

Compared with the State and South Dublin, Newcastle has a higher proportion of adults in the 30-44 age bracket. Significantly the 30-39 age bracket where Newcastle has a proportion of population at 24.16% compared to 17.39% in South Dublin and 15.78% in the State. The proportion of Newcastle's population between ages 20-29 is lower than both State and County figures. Between 55-85+ the proportion of the population in nearly all age brackets in Newcastle is lower than both the State and County, most significantly between 55-59 where the difference is 1.93%. Newcastle has an over 65 years of age population of 9.99% compared to 1.11% in County Kildare and 13.39% in the State.

Based on the foregoing, it is of note that Newcastle has a higher proportion of population between the ages of 30-44 and a much lower proportion of population aged 65 years and over. It is considered that Newcastle has a much younger population compared to South Dublin and the State and has done well in attracting cohorts of younger families, likely looking for affordable family accommodation within commuting distance of Dublin City and other economic centres.

### 5.3.4 Economic Activity

Following more than a decade of sustained economic growth (quantitative expansion in Gross National Product (GNP)), the Irish economy suffered a considerable economic downturn from 2008. The ESRI publication 'Ireland's Recovery from Crisis' by John Fitzgerald describes the situation as follows:

*'The crisis that broke in the Irish economy in 2008... had developed over the previous five years, which was financed by inflows of capital into the domestic banking system. The high expected returns from investment in housing in Ireland had evoked a huge supply response. The number of dwellings built in Ireland at the height of the boom was approximately 100,000. Today the number being built is less than 10,000. This meant that a very substantial part of the economy was devoted to building and construction in 2007...*

*When the crisis hit, the building and construction sector collapsed resulting in a fall in GDP from peak to trough of just under 10 percent and a fall in GNP of over 15 percent.<sup>2</sup> The unemployment rate rose very rapidly. Between 2007 and 2012 it had increased by 10 percentage points...*

*...While it is reasonably clear from the data for GDP that the economy peaked in 2007 and that output (and employment) levels fell precipitously in 2009, it is much less clear when the recovery actually began...*

*...in the case of GDP the trough was in 2010 and there was very slow growth in 2012 and 2013. While GNP, unadjusted for redomiciled plcs., stabilised in 2010, it only returned to significant growth in 2012. Probably the best measure of domestic welfare is GNP, adjusted to exclude the redomiciled plcs. This aggregate suggests that the recession in Ireland continued through 2010 and 2011, with recovery only beginning in 2012.*

*The clearest signal of what is happening in the economy is probably the growth in employment (Figure 3). Beginning with the last quarter of 2012, there have been five consecutive quarters where seasonally adjusted employment grew, quarter-on-quarter, by over 0.6 percent. This suggests a very similar turning point to the GNP data – some time in 2012. Since late 2012, there has also been a significant increase in hours worked.'*

The Economic and Social Research Institute (ESRI) review the most recent national and internal economic trends and emerging patterns on a quarterly basis. The Summer 2019 Quarterly Economic report from ESRI states that:

*'While a number of international concerns continue to cast a shadow on the domestic economy, both taxation receipts and labour market indicators suggest that the Irish economy continues to perform strongly in 2019. Output is still forecast to grow by 4.0 per cent in 2019 before moderating somewhat at 3.2 per cent in 2020. Unemployment is set to fall to 4.5 per cent by the end of the present year and to 4.1 per cent at the end of the next year.....'*

*'The Irish economy appears to be operating at its full potential level. The continued strong performance of the labour market has resulted in a significant increase in both nominal and real wages in recent years.....'*

The Newcastle LAP states that it is an objective to provide better connections to existing employment areas and it is a specific aim of the LAP to promote and facilitate improved connectivity and permeability throughout the town.

Newcastle is located 19km west of Dublin City Centre and benefits from a reasonable level of connectivity to the City Centre, the wider City Region and its international ports and airports via the N7, which is accessed

via local roads. Public transport in Newcastle is limited to primarily one bus service connecting Newcastle with Dublin, and a further night bus operating on Friday-Saturday. Newcastle benefits from a location 3.5km from Hazelhatch and Celbridge train station, which provides regular services to Dublin, Cork, Limerick, Waterford, Galway and other key towns. Saggart Luas stop is also circa 5km away providing access to Dublin along the Luas red line.

The economic profile of Newcastle reflects its locational strengths. The working population of Newcastle in 2016 was 1,445 persons (65.97%) with managerial and technical being the largest sector, employing 30.53% of the working population, followed by non-manual employing 20.41% of the working population.

As indicated in Table 5.3, Newcastle has a higher proportion of the population over the age of 15 years at work than either the State or the County levels. Furthermore, as per Table 5.4 a higher proportion of the population are employed in managerial, technical and non-manual services when compared to both the County and the State.

**Table 5.3 Principal Economic Status Population 15 years and over**

Geographic Area	State		South Dublin		Newcastle	
	No. of Persons	% of Total	No. of Persons	% of Total	No. of Persons	% of Total
At work	2,006,641	53.43	119,210	55.53	1,445	64.97
Looking for first regular job	31,434	0.84	2,030	0.95	17	0.76
Unemployed having lost or given up previous job	265,962	7.08	16,235	7.56	96	4.32
Student	427,128	11.37	23,833	11.10	152	6.83
Looking after home/family	305,556	8.14	17,074	7.95	170	7.64
Retired	545,407	14.52	27,258	12.70	254	11.42
Unable to work due to permanent sickness or disability	158,348	4.22	8,427	3.93	85	3.82
Other	14,837	0.40	612	0.29	5	0.22
<b>Total</b>	<b>3,755,313</b>	<b>100</b>	<b>214,679</b>	<b>100</b>	<b>2,224</b>	<b>100</b>

(Source: CSO, Census 2016)

**Table 5.4 Population Age 15 and Over by Social Class**

Geographic Location	State		South Dublin		Newcastle	
	No. of Persons	% of Total	No. of Persons	% of Total	No. of Persons	% of Total
Professional workers	264,706	7.05	20,429	7.33	137	6.16

Geographic Location	State		South Dublin		Newcastle	
	No. of Persons	% of Total	No. of Persons	% of Total	No. of Persons	% of Total
Managerial and technical	993,936	26.47	79,021	28.35	679	30.53
Non-manual	666,915	17.76	53,954	19.35	454	20.41
Skilled manual	550,810	14.67	41,548	14.90	374	16.82
Semi-skilled	425,477	11.33	26,184	9.39	238	10.70
Unskilled	149,273	3.97	8,892	3.19	45	2.02
All others gainfully occupied and unknown	704,196	18.75	48,739	17.48	297	13.35
<b>Total</b>	<b>3,755,313</b>	<b>100</b>	<b>278,767</b>	<b>100</b>	<b>2,224</b>	<b>100</b>

(Source: CSO, Census 2016)

Table 5.5 Highest Level of Education Achieved

Geographic Location	State		South Dublin		Newcastle	
	No. of Persons	% of Total	No. of Persons	% of Total	No. of Persons	% of Total
No Formal Education	52,214	1.69	2,727	1.56	33	1.75
Primary Education	334,284	10.79	18,045	10.35	126	6.70
Lower Secondary	449,766	14.52	25,123	14.41	235	12.49
Upper Secondary	573,643	18.52	34,240	19.65	365	19.40
Technical or Vocational qualification	271,532	8.77	15,819	9.08	208	11.06
Advanced Certificate/Completed Apprenticeship	182,318	5.89	9,912	5.69	157	8.35
Higher Certificate	153,351	4.95	8,598	4.93	123	6.54
Ordinary Bachelor Degree or National Diploma	237,117	7.66	13,073	7.50	179	9.52
Honours Bachelor Degree Professional qualification or both	331,293	10.70	18,568	10.65	198	10.53
Postgraduate Diploma or Degree	284,107	9.17	15,260	8.76	128	6.80
Doctorate(Ph.D) or higher	28,759	0.93	1,322	0.76	16	0.85
Not stated	198,668	6.41	11,603	6.66	113	6.01



<b>Total</b>	<b>3,097,052</b>	<b>100</b>	<b>174,290</b>	<b>100</b>	<b>1,881</b>	<b>100</b>
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(Source: CSO, Census 2016)

Table 5.5 shows the population of Newcastle have achieved university qualifications at levels largely in line with the State and County.

### 5.3.5 Existing Social and Community Facilities in Newcastle

#### Sport and Recreation Facilities

Newcastle-Lyons is home to St Finian's (Newcastle) GAA club. The club recently developed their playing pitch at Aylmer Road. Newcastle-Lyons is also home to Peamount United F.C. The club is now based in a purpose-built facility in Greenogue. Elm Hall Golf Club is located near Newcastle at Hazelhatch. It features two 18-hole pitch & putt courses.

#### Health Care Provision

In terms of Primary Health Care provision, there is currently 1 GP operating in Newcastle, serving a population of approximately 3,093. There is also one practitioner of Traditional Chinese Medicine operation from the Woodlands Health Centre on the outskirts of Newcastle. Further access to health care facilities is provided by nearby towns and services including Rathcoole and Peamount Hospital.

#### Other Community Facilities

Newcastle is served by the South Dublin County Council Mobile Library, which regularly visits the town. St Finian's Community Hall is located on Main Street Upper providing the base for the proposed civic core of the town.

Extant permission is in place for change of use of the former National School Building, Main Street Upper, to use as a community facility to provide preschool services (daytime); Children's Therapy (evening sessions) and Youth Services (weekends). Permission was granted by South Dublin County Council under Reg. Ref. SD19/0102 on 1 July 2019.

### 5.3.6 Education Facilities

There are currently 5 (private) no. **childcare facilities** in the Newcastle Area providing in the order of 240 no. childcare spaces.

Additional accommodation been granted under Reg. Ref. SD19/0102 to provide preschool facilities for 51 no. children.

There is 1 no. **primary school** in Newcastle:

- St. Finian's National School - approximately 532 pupils attending.

St. Finian's National School has been subject to significant expansion over the last number of years. A further site has been reserved, within the application site, to provide a second primary school for future population growth. Nearby villages of Rathcoole and Saggart are served by a total of 3 no. primary schools.

There are no **post primary schools** in Newcastle, with the Holy Family Community School in Rathcoole (enrolment 956 no. pupils), less than 5km, serving the needs of the residents of Newcastle.

There are no **third level institutions** in Newcastle, requiring students to utilise the public transport or the road network to travel to institutions such as NUI Maynooth, located circa 13km to the north of the proposed development, or institutions in Dublin. Public transport to third level institutions is facilitated by bus services in Newcastle and the nearby Hazelhatch and Celbridge train station.

#### 5.4 Potential Impacts of the Proposed Development

This section provides a description of the specific, direct and indirect, impacts that could potentially result from the proposed development, both during the construction and operational phases of the proposed project. These potential impacts are described with reference to both the characteristics of the receiving baseline environment and characteristics of the proposed development. The potential impacts are described in terms of their (i) magnitude and intensity, (ii) integrity, (iii) duration and (iv) probability of impacts. Impact assessment addresses direct, indirect, secondary, cumulative, short, medium and long-term permanent, temporary, positive and negative effects as well as impact interactions.

Actual and perceived impacts of the proposed development on human beings may arise from a number of elements of the proposal. These impacts from Landscape and Visual, Roads and Traffic, Air Quality and Climate, Noise and Vibration and Material Assets are addressed in the appropriate chapters. The impacts identified below are in addition to those other impacts.

##### Impact Interactions & Cumulative Impacts

Cumulative impacts are identified as impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the proposed development. Overall the Newcastle LAP provides or approximately 850 to 1,100 no. additional units on lands zoned for new residential development within Newcastle, based on densities advocated under the LAP. The proposed development site, together with the adjoining lands under the control of the Applicant, represent a significant portion of the residential zoned lands in Newcastle and will facilitate the delivery key community infrastructure. It is envisaged that the balance of the Applicants lands will be brought forward for development as Phase 2 lands in the future.

There are no significant extant or ongoing planning applications in the vicinity of the application site. It is noted that permission has been granted for 40 no. residential units on lands immediately west of St. Finian's National School and directly adjoining the Main Development Area (ABP Ref. PL06S.301421). A further application is currently under consideration by An Bord Pleanála under ABP Reg. Ref PL06S.304908 in respect of a South Dublin County Council Notification of Decision to grant permission under Reg. Ref. SD18A/0363, for 18 no. units on a site to the west of the application site adjacent to Main Street.

Section 5.9 considers interactions between impacts on population and human health with different environmental factors.

## 5.4.1 Population

### Construction Phase:

Due to the construction works, there will be an increase in the number of persons working in the immediate area on a daily basis. Whilst some construction workers may move into the area to be closer to work this is likely to be short term and transient. The proposed development will have a **Slight Positive, Short Term** impact on population arising from the construction phase of the development.

### Operation Phase:

The construction of 406 no units will provide critical housing infrastructure for Newcastle, the wider hinterland and the Greater Dublin Area. The additional population for Newcastle will contribute positively to the community by reinforcing and strengthening the services and function of the town and by increasing housing supply in line with national housing policy. The proposed development will have a **Significant Positive Long Term Impact**.

### Cumulative Impact

Future residential development of the proposed development site, in combination with recent residential applications/proposals in the vicinity and future residential development of residential zoned lands, will increase the population of the Town in accordance with the Development Plan and the LAP and would therefore have a **Significant Positive Long Term Impact** of the population of Newcastle.

## 5.4.2 Community & Facilities

### Construction Phase:

Construction traffic arising from this proposal will utilise the existing road network and will therefore impact upon those members of the community using these roadways. A **Temporary Slight Negative Impact** is likely due to the restricted access once construction of new access to existing public road network commences.

### Operational Phase:

The proposed residential development will contribute additional population to the Newcastle community. This will contribute to the consolidation of the urban area and will assist in creating a more active, vibrant town with the critical mass to support a wide range of facilities and services.

The proposed development encompasses the initial phase of new public park and high-quality open spaces and will open formal pedestrian and cycle routes. A childcare facility will also be available to all members of the community. The proposed development provides for the reservation of a school site within the development which will be made available to the Department of Education as required. The proposed development provides for significant road infrastructure that will facilitate improved access and permeability for residents of Newcastle and will provide greater access between residential areas and the town centre.

The proposed development will have a **Significant Positive Long Term Impact** on the community and in particular in terms of improving permeability of the area.

### Cumulative Impact

It is envisaged that the future population in combination with the population increases as provided for under the LAP will enliven the town through engagement in local clubs and associations and supporting local shops, services and facilities. The proposed childcare facility will increase the availability of services to the existing community. The school site will be available to serve increasing population as considered necessary by the Department of Education and Skills. The proposed development will significantly improve permeability and access for future residential populations to Main Street Newcastle. In combination with recent residential applications/proposals in the vicinity, the proposed development would have a **Significant Positive Long Term Impact** on the community and facilities of Newcastle.

### 5.4.3 Economic Activity and Employment

#### Construction Phase:

The provisions of direct employment (full and part-time employment) within the construction and related sectors over the course of the construction phase are likely to bring benefits to the local the local economy in the form of increases in consumption in the locality and through the additional supply of goods and services required over the duration of the construction phase. This may also result in the creation of secondary employment opportunities. This will be a direct **Short Term Moderate Positive impact**.

#### Operational Phase:

Local retail and businesses are likely to see a positive impact in the long term. The additional housing will likely lead to increased expenditure by new residents in the local community. This will have a **Long Term Moderate Positive Impact**.

The availability of high-quality housing is important in terms of attracting and retaining domestic and international businesses and commercial entities within the wider catchment area. The proposed development will provide a range of suitable housing for the employees of new or expanding businesses. This will have a **Long Term Moderate Positive Impact** on the economic functioning of the wider area.

### Cumulative Impact

In addition, the future population of the proposed development site and the nearby lands will create an enlarge customer base for existing commercial entities in Newcastle. In this way, it is considered that the cumulative impact of future development on employment and economic activity in Newcastle will be a **Long Term Moderate Positive Impact**.

## 5.5 Predicted Impacts on Human Health

### 5.5.1 Air Quality

This section has been informed by Chapter 9 'Air, Dust and Climatic Factors' prepared by AWN Consulting.

### Construction Phase

In the assessment of the impacts of the construction phase of the proposed development on Air, Dust and Climatic Factors, it is stated in Chapter 9 of this EIAR that the mitigation measures that will be put in place during construction of the proposed development will ensure that the impact of the development complies are minimised.

The assessment undertaken by AWN Consulting concluded that the impact of construction of the proposed development is likely to be short-term, localised and imperceptible with respect to human health.

### Operation Phase

As outlined in Chapter 9, the results of the air dispersion modelling study indicate that the impacts of the operational phase of the proposed development on air quality and climate is predicted to be localised, imperceptible with respect to the operational phase for the long and short term. Accordingly, the impacts to human health during the operational phase are localised, imperceptible with respect to the operational phase for the short and long term.

### Cumulative Impact

It is predicted that future residential developments in the vicinity of the proposed development site would have a similar impact as the modelled future residential scheme at the proposed site, which would have an imperceptible impact on air quality. It is further stated that any larger developments in the vicinity of the site would need to be the subject of EIA to ensure that no significant impacts on air quality arise.

## **5.5.2 Noise and Vibration**

This section has been informed by Chapter 8 'Noise and Vibration' prepared by AWN Consulting.

### Construction Phase

During the construction phase, the appointed contractor will be required to comply with the Safety, Health and Welfare at Work (General Application) Regulations 2007 (Statutory Instrument No. 299 of 2007) provide appropriate noise exposure mitigation measures where necessary. The noise exposure level to off-site receptors during the construction phase will be below the lower Action Level. Therefore, the risk of noise exposure resulting in potential hearing damage to off-site receptors is insignificant. Vibration impacts during the construction phase will be of short-term, neutral and imperceptible impact.

It is considered that the construction phase of the proposal will not have a significant effect on Human Health.

### Operation Phase

No significant noise impacts are expected from the operational phase of the proposed development. As such, there is no anticipated risk of long-term exposure to noise or vibration on human health resulting from the proposed development. No significant sources of vibration were considered to arise during the operational phase of the development.

It is considered that the operational phase of the proposal will have no significant effect on Human Health.

### *Cumulative Impact*

It is noted that there are no significant extant large-scale permissions in the immediate vicinity of the proposed development site and that future development of adjoining lands under the control of the Applicant represent a future phase for which planning permission will need to be sought. Therefore, it is unlikely that there will be large scale construction sites operating at the same in local area. Due to the location of the site in respect of noise sensitive locations and surrounding lands, it is concluded that there is minimal risk of cumulative construction noise emissions resulting in an exceedance of the relevant criteria.

### **5.5.3 Water: Hydrology and Hydrogeology**

This section has been informed by Chapter 7 'Water: Hydrology and Hydrogeology' prepared by DBFL Consulting Engineers. The predicted impacts on human health in relation to hydrology and hydrogeology have been considered with reference to local water quality; aquifer vulnerability; and, flooding.

#### *Construction Phase*

As noted above the underlying receiving groundwater is a locally important aquifer. The risk to the contamination of this water supply source from surface water run-off from the development during construction is considered to be low. The mitigation measures proposed, in conjunction with the fact that the surrounding surface waters are not used for potable water supplies, means that there are no likely significant impacts on human health arising from the construction phase. As such the predicted impact is considered to be **short-term, imperceptible** with a **neutral impact** on quality.

#### *Operation Phase*

No likely significant impacts to human health were identified during the operational phase in terms of water (hydrology & hydrogeology). Surface water drainage for the development has been designed in accordance with the GSDSDS therefore the risk to human health has been mitigated. As such, the predicted impact is considered to be **long term, imperceptible** with a **neutral impact** on quality.

### *Cumulative Impact*

With regard to cumulative impacts, this, and other future developments at the site and in surrounding areas, will be designed in accordance with best practice and relevant guidelines. Therefore, no cumulative impacts are anticipated in respect of risks from surface waters or flooding.

### **5.5.4 Land, Soil and Geology**

This section has been informed by Chapter 6 'Land, Soil and Geology' prepared by DBFL Consulting Engineers. The predicted impacts on human health in relation to land, soils and geology have been considered with reference to land take; and movement of soils during construction works.

#### *Construction phase*

There are no likely significant impacts to human health during the construction phase in terms of land, soils and geology due to the mitigation measures proposed. As such, the predicted impact is considered to be **short-term, imperceptible with a neutral impact** on quality.

### *Operational phase*

There are no likely significant impacts to human health during the operational phase in terms of land, soils and geology due to the mitigation measures proposed. As such, the impact is considered to be **long term, imperceptible with a neutral impact** on quality.

### *Cumulative Impact*

With regard to cumulative impacts, it is stated in Chapter 6 that with the implementation of mitigation measures proposed, the potential for cumulative effects on the local land, soils and geology environment with any adjacent developments is determined to be **insignificant**. It is noted that in respect of land-take, the proposed development site represents previously disturbed lands which are no longer in agricultural use and therefore it will not have any meaningful reduction in the agricultural capacity of the area. The proposed development will result in the sustainable consolidation of settlement areas over time

## **5.5.5 Unplanned Events**

This section considers unplanned events which may impact on human health during the construction and operational phase of the proposed development. This section has been informed by Chapters 7, 8, 9, 12 and 13 of this EIAR.

To prevent direct run-off from the proposed development site to watercourses, or infiltration to groundwater from accidental spillages, it is stated in Chapter 7 that mitigation measures will be put in place during the construction phase of this proposed development. These mitigation measures include, storage of paints, oils and fuels in designated bunded areas, refuelling of vehicles either off site or in designated areas away from surface water gullies or drains, the use of double skinned tanks to transport. In addition, emergency response procedures will be clearly outlined in the CEMP for the site. All personnel working on the site will be suitably trained in the implementation of the procedures included in same.

It is stated in Chapter 9 that alterations to Air and Climate as a result of climate change may increase the potential of extreme weather events and increased risk of flooding. Therefore, the proposed development has been designed with sufficient capacity for such extreme events.

It is stated in Chapter 8 that best practise control measures for noise and vibration will be put in place to protect construction workers and control noise and vibration impacts. Anticipated methods of construction will not give rise to significant vibration emissions, while worst case scenario noise emissions, are considered not significant. During the operational phase plant items associated with retail units, the creche or other ancillary areas with mechanical or electrical service requirements shall be selected to ensure noise criteria are not exceeded at residential dwellings within the development or at the nearest noise sensitive locations external to the site. Consequently, the risk of unplanned events should be minimised, and the predicted effects are deemed to be neutral.

It is noted in Chapter 12 that there are currently no road safety issues in the immediate vicinity of the proposed development site access points. Consequently, the risk of increased road traffic accidents as a result of the proposed development is low, due to traffic calming measures being integrated into the design of roads mitigating the impact of increases in traffic arising from the proposed scheme.

It is stated in Chapter 13 that the proposed infrastructure is designed in accordance with the relevant regulations, codes of practice and guidelines to provide sufficient capacity for the expected loading. Where

the designed capacity of piped drainage is exceeded, flow will travel overground along roads; the road infrastructure has been designed to convey overland flow away from highly vulnerable receptors. All proposed electricity, gas and telecommunications infrastructure will be provided below ground, where the risk of accidental damage is minimised. Construction Management Plan will be developed and implemented to mitigate potential risks associated with construction accidents.

#### **5.4.4 Human Health and Safety**

##### Construction Phase:

Like most substantial development projects, the construction phase of the proposed development is likely to have some short-term adverse impacts on local residents. These impacts are likely to result from construction traffic movements to and from the site together with other possible health and safety impacts, such as nuisances associated with construction access requirements, pollution spillages, migration of surface contaminants, dust, noise and littering. Secondary impacts may result from increased construction traffic hauling building materials to and from the proposed development site which are likely to affect humans in a variety of potential locations distant from the proposed development site, such as residents near aggregate sources and landfill sites.

Typically, these impacts are short lived and are dealt with in more detail under relevant chapters of this EIAR. The construction methods employed, and the hours of construction proposed on site will be undertaken in such a manner to mitigate any adverse resulting effects.

##### Operational Phase:

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

### **5.6 Proposed Remedial and Mitigation Measures**

The mitigation measures outlined in this section will minimise and/or eliminate the potential adverse impacts on the local community and amenities.

#### **5.6.1 Construction Phase Measures**

A range of construction related remedial and mitigation measures are proposed throughout this EIAR document with reference to the various environmental topics discussed under each. These measures seek to ensure that any likely significant adverse environmental impact on humans during the construction phases being either ameliorated to have an acceptable level of impact or be avoided altogether.

In order to minimise impacts during the construction phase, the following mitigation measures are recommended:



- A construction management plan will be prepared to minimise impacts on adjacent residents.
- A construction traffic management plan will be prepared to mitigate against any potential traffic delays and the facilitate the existing patterns of vehicular movement.
- The mitigation measures in relation to construction, traffic, noise, air quality and landscaping as set out in this EIAR will be carried out in full to minimise impacts on adjacent residencies.

### 5.6.2 Operation Phase Measures

All operational phase remedial and mitigation measures included throughout this EIAR document (and listed in Chapter 16) with reference to all environmental topics will be implemented.

## 5.7 Residual Impact

### 5.7.1 Construction Phase

Some minor temporary residual impacts on human beings are likely to result during the construction phase. These impacts are mostly related to construction activities and include impacts such as nuisance through noise and air pollution through the creation of dust. However, it is anticipated that subject to the careful implementation of proposed remedial and mitigation measures proposed throughout EIAR any likely adverse and significant environmental impacts will be avoided.

### 5.7.2 Operation Phase

The delivery of the 406 no. units will significantly contribute to the housing stock available in this area. The proposed high quality open spaces and childcare facility together with improved accessibility will be available to all members of the public. Not only will this new population contribute to the critical mass of population required for the provision of services in Newcastle but they will also boost the trade of local shops and businesses. In this way, no residual negative impacts would be expected.

### 5.7.3 'Do Nothing' Impact – Status Quo

A 'do nothing' approach would result in the status quo of the proposed development site as disturbed, open ground being retained in perpetuity and the status of the environmental receptors, as described throughout this EIS remain unchanged. Thus, the likelihood of any significant adverse impacts on population or human health arising from either the constructional or operational phases of the proposed development would not arise.

The delivery of an additional 406 no. residential dwellings will significantly contribute to fulfilling a range of objectives relating to delivering housing at a local, regional and national level. The proposed development site is zoned for new residential development and forms a key part of the neighbourhood plan specified in the Newcastle Local Area Plan 2012-2022. Failure to deliver the proposed residential development would result in appropriately zoned and designated lands not realising its potential to meet growing demand for housing.

## **5.8 Reinstatement**

No reinstatement measures are proposed with respect to Human Beings.

## **5.9 Interactions**

The impact of the proposed development on human beings is addressed throughout the EIAR, in a number of chapters. In addition to those impacts set out in this chapter, other aspects that affect human beings include the following.

### **5.9.1 Human Beings / Air Quality and Climate**

An adverse impact due to air quality in either the construction or operational phase has the potential to cause health and dust nuisance issues. The mitigation measures that will be put in place at the proposed development will ensure that the impact of the proposed development complies with all ambient air quality legislative limits and therefore the predicted impact is long term and neutral with respect to human beings.

### **5.9.2 Human Beings / Noise and Vibration**

Mitigation measures to reduce the impact of noise and vibration on nearby residents during the construction of the proposed development are discussed in Chapter 8 of this EIAR. Of note are the adjoining residents that may be subjected to noise nuisances due to construction activities and the presence of works vehicles. Noise related mitigation measures will be implemented as per best practice guidance and are discussed in detail in Chapter 8. No further mitigation measures are proposed.

### **5.9.3 Human Beings / Landscape and Visual**

During the construction phase, the community is likely to experience visual impact due to the new buildings in the landscape. In the longer term, the development will alter the perception of the site for both the local and visiting communities. The impact of the proposed development on landscape and visual aspects is addressed in Chapter 11 of the EIAR. Measures to screen/reduce the visual impact of the scheme on neighbouring residents are detailed. No further mitigation measures are proposed.

## **5.10 Difficulties Encountered**

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