

5. POPULATION & HUMAN HEALTH

5.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) identifies, describes, and assesses the potential effects of the 'Proposed Development' on human health and population. This section of the EIAR has been completed in accordance with the EIA guidance and legislation set out in Chapter 1: Introduction. The full description of the Proposed Development is provided in Chapter 4 of this EIAR.

For the purposes of this EIAR, where the Proposed Development is referred to, this relates to all the project components described in detail in Chapter 4 of this EIAR. In order to assess the population on the vicinity of the Proposed Development, the Study Area for the Population section of this EIAR was defined in terms of the DEDs where the Proposed Development is located.

One of the principal concerns in the development process is that individuals or communities, should experience no significant diminution in their quality of life from the direct or indirect effects arising from the construction and operation of a development. Ultimately, all the impacts of a development impinge on human health, directly or indirectly, positively or negatively. The key issues examined in this chapter of the EIAR include population trends, human health, employment and economic activity, land-use, residential amenity community facilities and services, tourism, property values, noise, and health and safety (with potential indirect potential effects on population and human health).

5.1.1 Statement of Authority

This section of the EIAR has been prepared by Niamh McHugh, David Naughton, Daire O'Shaughnessy and reviewed by Michael Watson, of MKO. Niamh is a Graduate Environmental Scientist and holds a BSc (Hons) in Environmental Science from the National University of Ireland, Galway. Since joining the company in 2021, Niamh has been involved in the preparation of chapters for a number of Environmental Impact Assessment Reports for large-scale developments. David is an Environmental Scientist with five years of consultancy experience with MKO and has been involved in a number of EIAR applications, predominantly in renewable energy, namely onshore wind. David has worked as project manager for a number of EIAR applications, providing a pivotal link liaising between the applicant and the EIAR project team to ensure all work is carried out to a high standard. David holds a BSc (Hons) in Environmental Science. Daire O'Shaughnessy is an Environmental Scientist who holds a B.Sc (Hons) in Environmental Science with three years of consultancy experience with MKO and has been involved in a range of EIAR applications. Michael Watson is a Project Director with MKO; with over 20 years' experience in the environmental sector. His project experience includes the management and completion of Environmental Impact Assessments (EIS/EIAR) including Population and Human Health chapters across a range of sectors.

5.2 Population

5.2.1 Receiving Environment

This socio-economic study of the receiving environment included an examination of the population and employment characteristics of the area. Information regarding the population and general socio-economic data were sourced from the Central Statistics Office (CSO), the Meath County Development Plan 2021 - 2026, The Kildare County Development Plan 2017-2023, Fáilte Ireland and any other literature pertinent to the area. This information was sourced from the Census of Ireland 2016, which is the most recent census for which a complete dataset is available, also the Census of Ireland 2011, the Census of Agriculture 2020, and from the CSO website (www.cso.ie). At the time of writing, the Census data for 2022 was not available. Census information is divided into State, Provincial, County, Major Town and District Electoral Division (DED) level.

The Proposed Development is located in south County Meath and to the northeast environs of Maynooth town. The proposed strategic employment zone (Site A) is located approximately 1km north of Maynooth at its closest point, the proposed healthcare facilities (Site B) are located approximately 500m north of Maynooth town at its closest point, the proposed strategic housing development (Site C) is located approximately 1.1km to the north of Maynooth, the Maynooth outer orbital road (MOOR) is located approximately 1km from Maynooth town at its nearest point along the existing R157. Please refer to Figure 1-1 of Chapter: Introduction for the site location. Both the strategic employment zone (Site A) and the healthcare site (Site B) within the Proposed Development are accessed by the existing R157 Regional Road. The strategic housing development (Site C) is accessed to the north by the existing L2214 Local Road and the existing L6219 & L2214-3 Local Roads to the west. The MOOR will link the existing R157 Regional Road, located to the east of Site B, to the Moyglare Hall road in Mariavilla, located southwest of the SHD (Site C) site.

For the purposes of this EIAR, where the Proposed Development is referred to, this relates to all the project components described in detail in Chapter 4 of this EIAR. In order to assess the impact on population in the vicinity of the Proposed Development, the Study Area for the Population section of this EIAR was defined in terms of the Electoral Districts (DEDs) where the Proposed Development is located.

The site of the Proposed Development lies predominately within the Rodanstown DED while also lying partly in Maynooth DED as shown in Figure 5-1. The Study Area has a population of 17,121 persons, as of 2016 and comprises a total land area of 63.3 km², (Source: CSO Census of the Population 2016). Rodanstown DED encompasses rural lands and so does not have any primary population centres. Maynooth DED includes a large town which acts as a primary population centre. Maynooth is classed under the Kildare County Development Plan 2017-2023 settlement hierarchy as a Large Growth II Smaller in scale but strong active growth town.

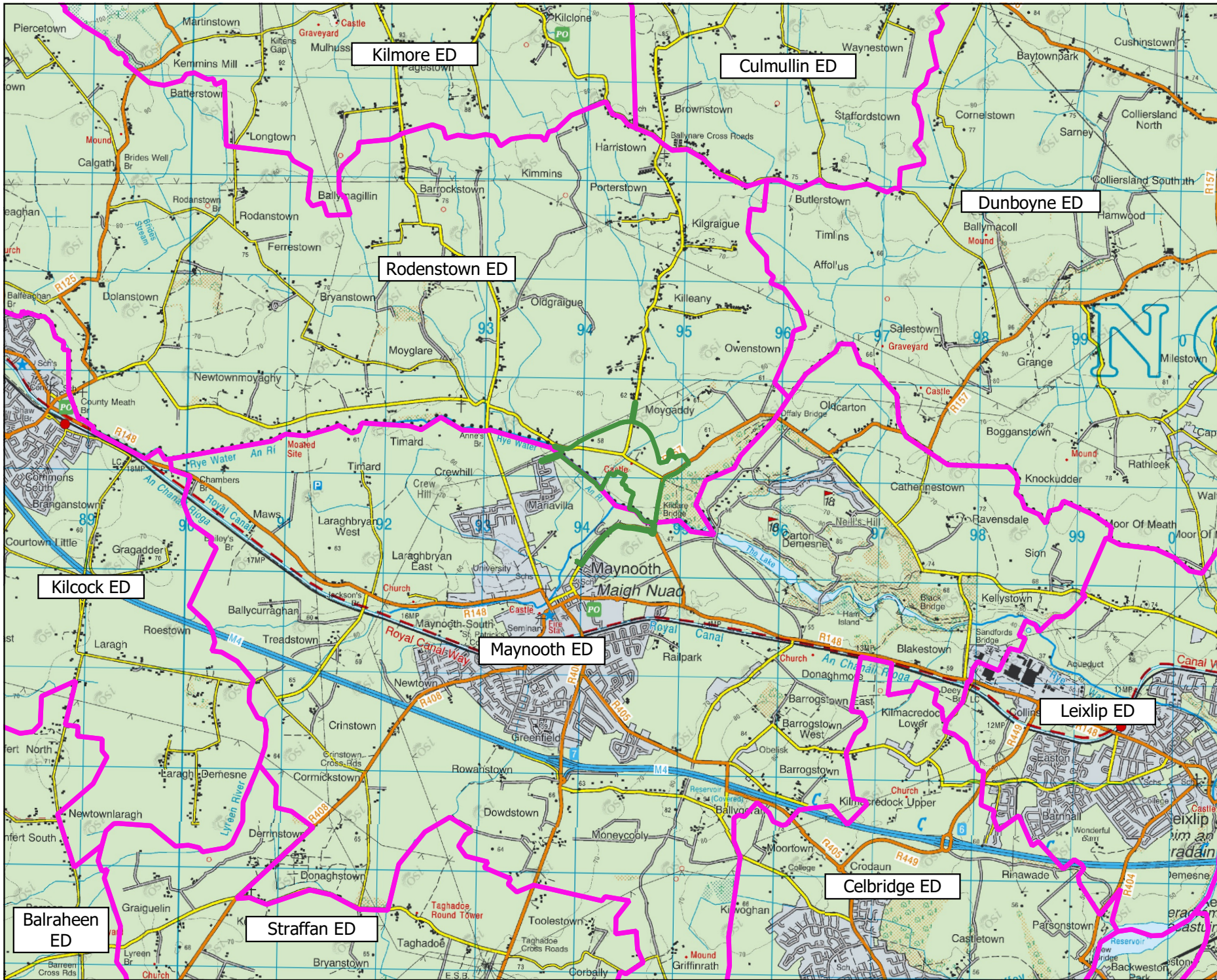
5.2.2 Population Trends

In the period between the 2011 and the 2016 Census, the population of Ireland increased by 3.8%. During this time, the population of County Meath increased by 5.9% to 195,044 persons and the population of County Kildare by 5.8% to 222,504. Other population statistics for the State, County Meath, County Kildare and the Study Area have been obtained from the Central Statistics Office (CSO) and are presented in Table 5-1 below:

Table 5-1 Population Statistics 2011 - 2016 (Source CSO)

| Area | Population | | % Population Change |
|-------------|------------|-----------|---------------------|
| | 2011 | 2016 | 2011-2016 |
| State | 4,588,252 | 4,761,865 | 3.8 |
| Co. Meath | 184,135 | 195,044 | 5.9 |
| Co. Kildare | 210,312 | 222,504 | 5.8 |
| Study Area | 14,656 | 17,121 | 16.8 |

The data presented in Table 5-1 shows that the population of the Study Area increased by 16.8% in the period between 2011 and 2016. This rate of population growth is significantly higher than that which was recorded at State level, and higher than the figure recorded for both Co. Meath and Co. Kildare also.



Map Legend

- EIAR Site Boundary
- Electoral Divisions



Drawing Title
Electoral Division Map

Project Title
Moygaddy Mixed-Use Development

| | |
|------------------------------|----------------------------------|
| Drawn By TM | Checked By MW |
| Project No. 210414 | Drawing No. Figure 5-1 |
| Scale 1:50,000 | Date 19.08.2022 |

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5.2.3 Population Density

The population densities recorded within the State, County Meath, County Kildare and the Study Area during the 2011 and 2016 Census are shown in Table 5-2.

Table 5-2 Population Density in 2011 and 2016 (Source: CSO)

| Area | Population Density (Persons per square kilometre) | |
|----------------|--|--------|
| | 2011 | 2016 |
| State | 65.57 | 68.06 |
| County Meath | 78.62 | 83.28 |
| County Kildare | 124.08 | 131.27 |
| Study Area | 231.53 | 270.47 |

The population figures for the study area show that the population density in 2011 was recorded as being 231.53 persons per km², and the same figure recorded in 2016 was 270.47 persons per km². This figure is higher than both the figures recorded at the State and Counties Level.

5.2.4 Household Statistics

The number of households and average household size recorded within the State, County Meath, County Kildare and the Study Area during the 2011 and 2016 Census are presented in Table 5-3 below.

Table 5-3 Number of Households and Average Household Size 2011 – 2016 (Source: CSO)

| Area | 2011 | | 2016 | |
|----------------|-------------------|---------------------|-------------------|---------------------|
| | No. of Households | Avg. Size (persons) | No. of Households | Avg. Size (persons) |
| State | 1,654,208 | 2.8 | 1,697,665 | 2.8 |
| County Meath | 62,201 | 3.0 | 64,234 | 3.0 |
| County Kildare | 70,763 | 2.9 | 73,569 | 3.0 |
| Study Area | 4,887 | 2.9 | 5,409 | 3.0 |

In general, the figures presented in the table above show the rate of household growth to be broadly similar at State, County and Study Area level. The average size of a household within the Study Area increased by 0.1 persons in the period between 2011 and 2016. The figures for State and County level remained the unchanged at 2.8 persons and 3.0 persons respectively between 2011 and 2016.

5.2.4.1 Employment by Socio-Economic Group

Socio-economic grouping divides the population into categories depending on the level of skill or educational attainment required. The ‘Higher Professional’ category includes scientists, engineers, solicitors, town planners and psychologists. The ‘Lower Professional’ category includes teachers, lab

technicians, nurses, journalists, actors and driving instructors. Skilled occupations are divided into manual skilled such as bricklayers and building contractors; semi-skilled such as roofers and gardeners; and unskilled, which includes construction labourers, refuse collectors and window cleaners. Figure 5-2 shows the percentages of those employed in each socio-economic group in the State, County Meath, Co. Kildare and the Study Area, as reported during the 2016 Census.

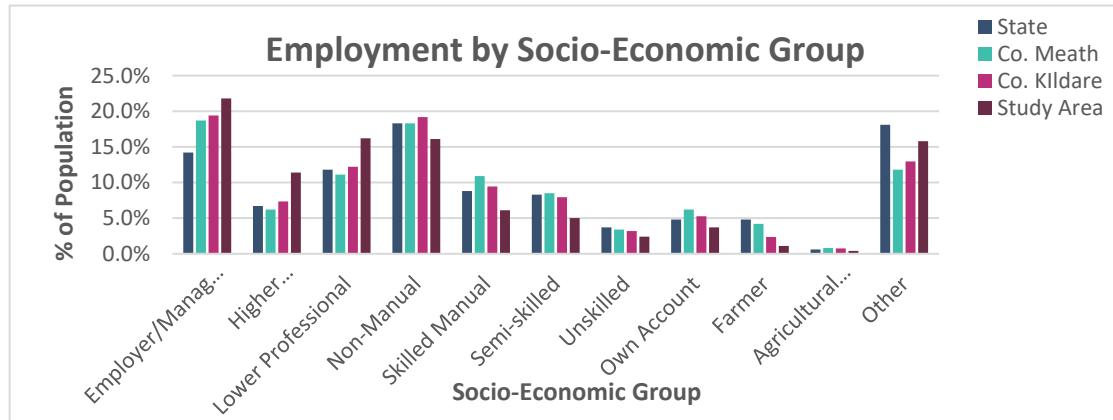


Figure 5-2 Employment by Socio-Economic Group in 2016 (Source: CSO)

The highest levels of employment within the Study Area were recorded in the Employer/Manager category. The employment in this category was significantly higher than the figures recorded at a state and county level. The levels of employment in the Higher Professional category and Lower Professional category were also higher in the Study Area than at a State and County level. The levels of employment recorded for Non-Manual, Skilled Manual, Semi-Skilled, Unskilled, Own Account, Farmer and Agricultural Workers in the Study Area were lower than figures recorded at both a state and County level.

The CSO figures for socio-economic groupings have a limitation of including the entire population, rather than just those who are in the labour force. It is likely that this is what gives rise to the high proportion of the population shown to be in the 'Other' category in Figure 5-2.

5.2.5 Land Use

The existing land use of the Proposed Development comprises agricultural grassland, with smaller areas of existing hedgerows and public roads. The total area of farmland surrounding the Proposed Development in the Study Area measures 4987.5 hectares, which is approximately 78.8% of the land within the Study Area. There are 73 farms located within the Study Area with an average farm size of approximately 72.85 hectares. Within the Study Area, farming employs 184 people, and the majority of farms are family-owned and run. Table 5-4 shows the breakdown of farmed lands within the Study Area.

Table 5-4 Farm Size and Classification within the Study Area in 2020 (Source: CSO)

| Characteristic | Value |
|-------------------------------------|-----------------|
| Size of Study Area | 6,330hectares |
| Total Area Farmed within Study Area | 4,987.8hectares |
| Farmland as % of Study Area | 78.8% |
| Breakdown of Farmed Land | Area (hectares) |
| Total Grassland | 3,802.7 ha |
| Total Livestock Units | 4,773 |

5.2.6 Services

5.2.6.1 Education

The closest primary school to the Proposed Development is Gaelscoil Ruairi, which is located approximately 350m west of the proposed Moyglare Bridge which will be constructed as part of the Proposed Development. The nearest Secondary School, Maynooth Community College, is located approximately 150m west of the Proposed Development, close to the proposed Moyglare Bridge. There are also a number of preschools and creches in the vicinity of the Proposed Development, specifically within the environs of Maynooth town.

The nearest third-level institution to the Proposed Development is the National University of Ireland, Maynooth, which is located approximately 750m west of the Proposed Development site.

5.2.6.2 Access to Public Transport

Within the site and surrounding vicinity, there are many local transport links and amenities which are available to all residents in the local area.

- Maynooth train station is located in Maynooth town centre and is approximately 820m southwest of the Proposed Development site. The station is an 11-minute walk, or an 3-minute drive from the Proposed Development and the train line serves Dublin and Sligo, as well as intervening stations.
- Buses also depart from the University which serve Dublin City centre and environs. This bus stop is approximately 750m southwest of the Proposed Development site, taking approximately 3 minutes to reach by car and 10 minutes on foot.

Within the Proposed Development site, the provision and maintenance of pedestrian and cycle infrastructure will be provided by the construction of the facilities and road upgrade works, ensuring connectivity with adjoining routes and off-site networks. High quality secure bicycle parking facilities for both short term and long-term bicycle parking requirements will also be provided within each component of the Proposed Development.

5.2.6.3 Amenities and Community Facilities

Maynooth town, which is the closest urban area to the Proposed Development, possesses a number of amenities and community facilities, including GAA, Rugby and other sports clubs and recreational areas. The closest church to the Proposed Development site is St. Mary's Catholic Church in Maynooth, which is located approximately 420m to the southwest of the Proposed Development.

There are a wide range of services available in the area, retail and personal services are centred in Maynooth town centre, with further industrial areas and business parks located in the environs of Maynooth town.

The area around the Proposed Development has many opportunities for walking and cycling in the countryside. Carton House demesne is located directly adjacent to the east of the Proposed Development, on the eastern side of the R157 Regional Road. Carton House demesne possesses 1,100 acres of woodland and walking trails. The Royal Canal Greenway runs 130 km from Maynooth to Longford. The Greenway is accessible from Maynooth Town Centre approximately 700m south of the Proposed Development site.

5.3 Tourism

5.3.1 Tourism numbers and Revenue

Tourism is one of the major contributors to the national economy and is a significant source of full time and seasonal employment. During 2019, total tourism revenue generated in Ireland was approximately €9.5 billion, an increase on the €9.4 billion revenue recorded in 2018. Overseas tourist visits to Ireland in 2019 grew by 0.7% to 9.7 million (*Tourism Facts 2019*, Fáilte Ireland, March 2021).

Ireland is divided into seven tourism regions. Table 5-5 shows the total revenue and breakdown of overseas tourist numbers to each region in Ireland during 2019 (*Tourism Facts 2019*, Fáilte Ireland, March 2021).

Table 5-5 Overseas Tourists Revenue and Numbers 2019 (Source: Fáilte Ireland)

| Region | Total Revenue (€m) | Total Number of Overseas Tourists (000s) |
|--------------------------|-----------------------|---|
| Dublin | €2,210m | 6,644 |
| Mid-East/Midlands | € 348m | 954 |
| South-East | €261m | 945 |
| South-West | €970m | 2,335 |
| Mid-West | €472 m | 1,432 |
| West | €653m | 1,943 |
| Border | €259m | 768 |
| Total | €5,174 m | 15,021 |

The Proposed Development site is located within the Mid-East/Midlands region. According to *Regional tourism performance in 2019* (Fáilte Ireland, March 2021) the Mid-East/Midlands region which comprises Counties Louth, Laois, Longford, Offaly, Meath, Kildare, Wicklow, and Westmeath benefitted from approximately 6.4% of the total number of overseas tourists to the country and approximately 6.7% of the associated tourism income generated in Ireland in 2019.

Although the data for 2019 or 2018 is not available, Table 5-6 presents the breakdown of overseas tourist numbers and revenue to the Mid-East region during 2017 (*2017 Topline Tourism Performance by Region*, Fáilte Ireland, August 2018). As can be observed in Table 5-6, County Kildare had the highest tourism revenue within the Region during 2017 at €91 million, which is almost double the revenue of County Meath.

Table 5-6 Overseas Tourism to Mid-East Region during 2017 (Source: Fáilte Ireland)

| Region | Total Revenue (€m) | Total Number of Overseas Tourists (000s) |
|----------------|--------------------|--|
| Meath | €44m | 162 |
| Kildare | €91m | 211 |
| Wicklow | €73m | 275 |

5.3.2 Tourism Attractions

The closest significant tourist attraction to the Proposed Development is Moygaddy House, which is a protected structure. Moygaddy House is located directly adjacent to the north of Site C (SHD). Further to this, Moygaddy Castle Towerhouse is also located within the Proposed Development to the south of Moygaddy House within the area that is designated as a Public Park as part of the proposed Development. Moygaddy Castle is also a protected structure of cultural heritage and archaeological importance. The majority of listed tourist attractions on the Discover Ireland (www.discoverireland.ie) and Irish Tourists website are located in the Boyne Valley Region, Maynooth Town and Curragh Region. These include but are not limited to the following:

- Moygaddy Castle – protected structure of heritage and archaeological importance, located within the proposed Strategic Housing Development within the Proposed Development.
- Moygaddy House – protected structure of heritage and archaeological importance, located to the north of the Strategic within the Proposed Development.
- Maynooth Castle – stone castle founded in the early thirteenth century, it was home to one of the most powerful Norman families and was home to the Great Earl of Kildare, who governed Ireland in the name of the King from 1487 to 1513. Maynooth castle is located approximately 1.4km south of the Proposed Development.
- Maynooth University Campus – Maynooth University possesses two campuses in Maynooth town, with the older southern campus possessing 19th-century buildings which are shared with St. Patrick’s College. The Southern Campus buildings are of particular interest from a tourism point of view as the National Science Museum and Russell Library are situated here. Maynooth University is located approximately 600m southwest of the Proposed Development.
- Carton House and Golf Club – Carton House is a 5-star luxury hotel which sits in 1,100 acres of privately owned woodland as well as 2 championship golf courses. These woodlands provide amenities for walking and cycling. The golf courses are nationally renowned and provide opportunities for both golfing regulars and beginners as lessons are provided. Carton House Golf Club is located approximately 550m east of the Proposed Development.
- The Curragh – The Curragh is possibly Ireland’s only example of surviving ancient lowland unenclosed grassland. It stretches for 5,000 acres from Kildare town to Newbridge. The Curragh is unique in terms of its natural and cultural heritage. It houses a training facility for the Irish Army, and also possesses a military museum and premier racecourse, Pollardstown Fen and the Royal Curragh Golf Club. The curragh is located approximately 31km southwest of the Proposed Development.
- Trim Castle – Trim Castle is the largest Anglo-Norman fortification in Ireland and was originally commissioned by Hugh de Lacy. Modern walkways within the castle have made it possible for extensive tours to take place inside the castle. The castle has been used as a backdrop for many television programmes and movies, such as Braveheart (1995). This is an OPW owned and operated site and is located approximately 22.5 km northwest of the Proposed Development.

- Bective Abbey – Bective Abbey was founded in 1147 for the Cistercian order by Murchad O'Maeil-Sheachlainn, the King of Meath. Bective Abbey is an extremely important monastic settlement and remains of high importance from a cultural heritage and archaeological point of view. In recent years, the Abbey and its surroundings have been used in Hollywood films such as Braveheart (1995) and The Last Duel (2021). Bective Abbey is located approximately 22km northwest of the Proposed Development.
- Hill of Tara – the Hill of Tara is often regarded as the 'jewel in the crown of the Boyne Valley landscape'. The site is of huge heritage and archaeological importance as it has been a place of burial and assembly for 5,000 years. The Hill of Tara was also known as being the legendary inauguration site of Ireland's High Kings and attracts large volumes of tourists each year due to this association with Ireland's ancient past, and also due to the walking trails and views of the lowlands of Meath and beyond which can be seen from the ridges of the Hill. The Hill of Tara is located approximately 20km north of the Proposed Development.

5.4 Human Health

The consideration of potential impacts on human health are examined separately in the Air & Climate, Noise & Vibration, Geology and Soils, Hydrology & Hydrogeology and Traffic Sections of the EIAR. These chapters should be consulted for detailed information on potential impacts, however a brief summary of the key information is provided in below. Potential issues relating to health and safety, and amenity concerns are also discussed below.

5.4.1 Natural Disaster and Major Accidents

The EIA Directive requires an assessment of the vulnerability of the project to natural disasters and the potential for the project to cause natural disasters with a view to understanding the associated environmental effects. Firstly, the Proposed Development is not a recognised source of pollution. It is not an activity that is subject to any environmental emissions controls consenting process such as EPA licensing or local authority permitting. Should a major accident or natural disaster occur the potential sources of pollution onsite during the construction and operational phases is limited. Sources of pollution at the Proposed Development with the potential to cause significant environmental pollution and associated negative effects on health such as bulk storage of hydrocarbons or chemicals, storage of wastes etc. will not occur. Small amounts of hydrocarbons will be present onsite during both construction and operational phases as described in Chapter 4 and these will be managed in accordance with best practice.

There is no site-specific mitigation required for the Proposed Development. Ireland is a geologically stable country with a mild temperate climate. The potential natural disasters that may occur are therefore limited to flooding and fire. The risk of flooding is addressed in Chapter 7 of this EIAR: Hydrology and Hydrogeology. It is considered that the risk of significant fire occurring, affecting the proposed site and causing the site to have significant environmental effects is limited. As described earlier, there are no significant sources of pollution within the Proposed Development with the potential to cause significant environmental or health effects.

Secondly, due to the nature, scale and location of the Proposed Development there is low potential for the project to cause any natural disasters or major accidents. The proposed construction works are shallow and will occur on stable, relatively flat lands. Major industrial accidents involving dangerous substances pose a significant threat to humans and the environment; such accidents can give rise to serious injury to people or serious damage to the environment, both on and off the site of the accident. The Proposed Development site is not regulated or connected to or close to any site regulated under the Control of Major Accident Hazards Involving Dangerous Substances Regulations i.e., SEVESO sites and so there are no potential effects from this source.

5.5 Residential Amenity

Residential amenity relates to the human experience of one's home, derived from the general environment and atmosphere associated with the residence. The quality of residential amenity is influenced by a combination of factors, including site setting and local character, land-use activities in the area and the relative degree of peace and tranquillity experienced in the residence. Impacts on residential amenity have the potential for indirect negative effects on Population.

As previously noted, the Proposed Development is currently used for agricultural grassland, with no commercial or residential developments within the development site. There is therefore a limited level of existing receptors associated with the site, which will assist in the assimilation of the Proposed Development into the immediate receiving environment. The closest dwelling is located within the EIAR site boundary approximately 100 metres to the north of the Strategic Housing Development within the Proposed Development at its nearest point. There are 3 no. additional dwellings located approximately 45m south of the proposed healthcare facilities which form part of the Proposed Development at its nearest point.

There are two main impacts upon residential amenity when considering the Proposed Development, one is noise while the other is visual amenity. Others include air emissions, in particular dust as well as traffic all of which have been assessed and mitigated to ensure no significant negative effects. Noise is a quantifiable aspect of residential amenity while visual amenity is more subjective. A detailed noise assessment has been completed as part of this EIAR and is discussed in more detail in Chapter 10. A comprehensive landscape and visual impact assessment has also been carried out, as presented in Chapter 11 of this EIAR. Impacts on human beings during the construction and operational phases of the Proposed Development is assessed in relation to each of these key issues and other environmental factors such as noise, traffic, and dust; see Section 5.6 below. The impact on residential amenity is then derived from an overall judgement of the combination of impacts due to changes to land-use and visual amenity, noise, traffic, dust, and general disturbance.

5.6 Likely Significant Impacts and Associated Mitigation Measures

The Department of Environment, Community and Local Government provide a proposed approach to reflect the requirements of the 2014 EIA Directive in relation to Population and Human Health in their Key Issues Consultation Paper. It states that,

'it is intended that the consideration of the effects on populations and on human health should focus on health issues and environmental hazards arising from the other environmental factors, for example water contamination, air pollution, noise, accidents, disasters, and not requiring a wider consideration of human health effects which do not relate to the factors identified in the Directive'

As described in Section 5.4 above, the potential environmental effects for the various environmental factors required for the EIAR, and the potential human health effects as addressed in the individual chapters and are referred to here. The reader is therefore directed to the relevant environmental chapter of this EIAR document for a more detailed assessment

5.6.1 'Do-nothing' Scenario

If the Proposed Development were not to proceed, no changes would be made to the current land-use practice. The site would continue to be managed under the existing farming and agricultural practices. The potential for additional investment and employment in the area in relation to the construction and operation of the Proposed Development would be lost.

5.6.2 Construction Phase

During the construction phase, all potential impacts are assessed in regard to the Proposed Development. The construction impacts may affect all aspects of the Proposed Development in some manner and occur simultaneously within the expected construction programme.

5.6.2.1 Strategic Employment Zone (Site A)

5.6.2.1.1 Health and Safety

Pre-Mitigation Impacts

Construction of Site A will necessitate the presence of a construction site. Construction sites and the machinery used on them pose a potential health and safety hazard to construction workers if site rules are not properly implemented.

The presence and operation of heavy machinery and traffic entering and leaving the site also poses a potential risk to members of the public that make use of the surrounding access roads.

These are considered to be short-term potential significant negative impacts.

Proposed Mitigation Measures

Site A will be constructed and operated in accordance with all relevant Health and Safety Legislation, including:

- Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005);
- Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299 of 2007), as amended;
- Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. 291 of 2013), as amended; and
- Safety, Health and Welfare at Work (Work at Height) Regulations 2006 (S.I. No. 318 of 2006).

During construction of Site A, all staff will be made aware of and adhere to the Health & Safety Authority's 'Guidelines on the Procurement, Design and Management Requirements of the Safety, Health and Welfare at Work (Construction) Regulations 2006'. This will encompass the use of all necessary Personal Protective Equipment, Risk Assessment and Method Statements and adherence to the site Health and Safety Plan.

Fencing will be erected in areas of the site where uncontrolled access is not permitted. Appropriate health and safety signage will also be erected on this fencing and at locations around the site. Only appropriately qualified and trained personnel will be permitted to operate machinery onsite. Site A will not be accessible to members of the public during the construction phase. A Construction and Environmental Management Plan (CEMP) has been prepared for each site and submitted with the relevant planning applications, and if planning permission is granted, it is envisaged that the Developer will engage with the local authority to agree an appropriate Traffic Management plan for the purposes of the Construction phase so as to minimise the impact of the construction works on the local road network.

Residual Impact

With the implementation of the above, there will be no significant negative impact on health and safety during the construction phase of Site A.

Significance of Effects

Based on the assessment above there will be no significant direct and indirect effects on health and safety during the construction phase of Site A.

5.6.2.1.2 **Employment and Investment**

There will be an opportunity for increased employment during the construction phase of Site A as it is anticipated that there will be an increase in job opportunities for those working in the construction sector, building services and supplies, as well as in local businesses.

The injection of money in the form of salaries and wages to those employed during the construction phase of the project has the potential to result in an increase in household spending and demand for goods and services in the local area. This would result in local retailers and businesses experiencing a short-term positive impact on their cash flow. This will have a short-term slight positive indirect impact.

The construction of Site A will result in an influx of skilled people into the area, bringing specialist skills for both the construction and operational phases that could result in the transfer of these skills into the local workforce, thereby having a long-term positive impact on the local skills base.

5.6.2.1.3 **Population**

During the construction phase of Site A there will be no negative impact on population, as it is predicted that the majority of staff and construction workers on site will be from the local community. The construction phase will have no impact on the population of the area in terms of changes to population trends or density, household size or age structure.

5.6.2.1.4 **Tourism and Amenity**

The Construction Phase of Site A may give rise to short-term imperceptible negative effects on nearby tourist attractions, namely Moygaddy House and Moygaddy Castle, through increases in road traffic volumes and noise emissions.

With regard to tourist attractions and amenity use around the site, described in Section 5.3.2, traffic management safety measures will be in place as part of the Construction & Environmental Management Plan prepared for each component of the Proposed Development. Please see traffic impacts below for further details on proposed mitigation measures. Noise impacts will be mitigated for as outlined in Section 5.6.2.1.5 below.

5.6.2.1.5 **Noise**

Pre-Mitigation Impacts

There will be an increase in noise levels in the vicinity of Site A during the construction phase, as a result of heavy machinery and construction work which has the potential to cause a nuisance to sensitive receptors located closest to Site A. These impacts will be short-term in duration.

Construction noise at any given noise sensitive location will be variable throughout the construction project, depending on the activities underway and the distance from the main construction activities to the receiving properties. The potential noise impacts that will occur during the construction phase of Site A are further described in Chapter 10: Noise and Vibration.

Proposed Mitigation Measures

Best practice measures for noise control will be adhered to onsite during the construction phase of Site A in order to mitigate the slight short-term negative impact associated with this phase of the development. These measures will include:

- Construction operations will in general be confined to the period Monday-Friday 0700-1900 h, and Saturday 0800-1600 h.
- Where it is proposed to operate plant during the period 0700-0800 h at locations within 100 m of offsite receptors, standard 'beeper' reversing alarms will be replaced with flat spectrum alarms.
- Hooting will be prohibited onsite. Drivers of plant and vehicles will be instructed to avoiding hooting at all times.
- Plant used onsite during the construction phase will be maintained in a satisfactory condition and in accordance with manufacturer recommendations. In particular, exhaust silencers will be fitted and operating correctly at all times. Defective silencers will be immediately replaced.
- Queuing of trucks near offsite receptors will be prohibited.
- Machinery not in active use will be shut down.
- A site representative will be appointed as a liaison officer with the local community.
- Where evening or night-time operations are required, local residents will be notified through the liaison officer.
- All complaints of noise received during the construction phase will be logged in a register and investigated immediately. Details of follow-up action will be included in the register.
- Where it is proposed to import potentially noisy plant to the site, the potential impact of noise emissions will be assessed in advance.
- Where generators or compressors are required within 100 m of offsite receptors, or previously completed receptors onsite, these will be fitted with manufacturers'

acoustic enclosures, or alternatively will be screened by a local acoustic screen or subsoil stockpile.

- Guidance set out in British Standard BS 5228-1:2009+A1:2014 with respect to noise control will be applied throughout the construction phase.

Residual Impact

Following the implementation of the above mitigation measures, there will be a short-term slight negative residual impact due to an increase in noise levels during the construction phase of Site A.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.1.6 **Dust and Air Quality**

Pre-Mitigation Impacts

Potential dust and vehicle emission sources during the construction phase of Site A include the use of machinery, plant equipment and on-site vehicular traffic. The entry and exit of vehicles from the site may result in the transfer of mud to the public road, particularly if the weather is wet. This may cause nuisance to residents and other road users. These impacts will not be significant and will be relatively short-term in duration. The potential dust impacts that may occur during the construction phase of Site A are further described in Chapter 9 of this EIAR: Air and Climate.

Proposed Mitigation Measures

The following measure will be enforced to ensure that dust and vehicle emission nuisance during the construction phase beyond the site boundary is minimised.

- All construction vehicles and plant will be maintained in good operational order while onsite, thereby minimising any emissions that arise.
- Overburden will be progressively removed from the working area in advance of construction.
- Dampening down the dust at the source by the use of barriers such as debris netting on scaffolding around the building to block dust escaping where the building is within 10m of existing residential properties.
- Site roadways will be maintained in a stoned hard-core condition not allowing soil to accumulate which when dry can create dust.
- Wheel wash equipment will be set up at the site exit gate for all construction vehicles to pass through prior to leaving the site thus ensuring that no dirt etc. is transported outside the site onto the roadways.
- Plant and equipment that have the potential to create volumes of dust will have appropriate attachments to allow water source to dampen dust to not allow it to get airborne.
- Road Sweepers may be deployed as required on public roadways in the unlikely event that mud or dust be transported from the site.

Residual Impact

Following the implementation of the above mitigation measures, there will be a short-term imperceptible negative impact due to dust emissions from the construction of Site A.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.1.7 **Traffic**

Pre-Mitigation Impacts

Construction traffic will be comprised of Heavy Goods Vehicle (HGV) and Light Goods Vehicle (LGV) movements involved in the delivery of construction materials to the site and the export of excess construction materials and plant from the site. A complete Traffic and Transportation Assessment (TTA) of the Proposed Development has been carried out by O'Connor Sutton Cronin & Associates. The full results of the TTA are presented in Section 13.1 of Chapter 13: Material Assets.

The types of vehicles that will be required to negotiate the local network represent abnormal size loads and a detailed assessment of the geometry of the proposed route was therefore undertaken. This will have a temporary slight to moderate negative impact on existing road users, which will be minimised with the implementation of the mitigation measures included in the proposed traffic management plan.

Proposed Mitigation Measures

A Traffic Management Plan will be developed and implemented to ensure any impact is short term in duration and slight in significance during the construction of Site A. Prior to commencement of any works, the occupants of dwellings in the vicinity of the proposed works will be contacted and the scheduling of works will be made clear. Local access to properties will also be maintained throughout any construction works and local residents will also be supplied with the number of the works supervisor in order to ensure that disruption will be kept to a minimum.

Residual Impact

Once a traffic management plan is implemented for the construction phase of Site A, there will be a short-term imperceptible negative residual impact on local road users.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.1.8 **Residential Amenity**

Pre-Mitigation Impacts

Potential impacts on residential amenity during the construction phase of Site A could arise primarily due to noise, dust or changes to visual amenity. Detailed noise modelling has been carried out as part of this EIAR and show that due to the nature and size of the proposed development it is clear that construction phase noise emissions will vary, and it is not possible or practical to calculate a single sound power output figure for the entire site. With respect to surrounding noise sensitive receptors, worst case scenario emissions will arise when localised works are undertaken close to their respective boundaries.

The types of vehicles that will be required to negotiate the local network represent abnormal size loads and a detailed assessment of the geometry of the proposed route was therefore undertaken. This will have a temporary slight to moderate negative impact on existing road users, which will be minimised with the implementation of the mitigation measures included in the proposed traffic management plan.

Proposed Mitigation Measures

A Traffic Management Plan will be developed and implemented to ensure any impact is short term in duration and slight in significance during the construction of Site A. Prior to commencement of any works, the occupants of dwellings in the vicinity of the proposed works will be contacted and the scheduling of works will be made clear. Local access to properties will also be maintained throughout any construction works and local residents will also be supplied with the number of the works supervisor in order to ensure that disruption will be kept to a minimum. The construction and environmental management plans (CEMP) include mitigation measures related to noise, dust and landscaping which will be in place to protect residential amenity. Construction operations will also in general be confined to the period Monday-Friday 0700-1900 h, and Saturday 0800-1600 h, reducing noise emissions in the local area during social hours.

Residual Impact

Once a traffic management plan and noise mitigation measures are implemented for the construction phase of Site A, there will be a short-term imperceptible negative residual impact on local residents and road users.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.2 Healthcare Facilities (Site B)

5.6.2.2.1 Health and Safety

Pre-Mitigation Impacts

Construction of Site B will necessitate the presence of a construction site. Construction sites and the machinery used on them pose a potential health and safety hazard to construction workers if site rules are not properly implemented.

The presence and operation of heavy machinery and traffic entering and leaving the site also poses a potential risk to members of the public that make use of the surrounding access roads.

These are considered to be short-term potential significant negative impacts.

Proposed Mitigation Measures

Site B will be constructed and operated in accordance with all relevant Health and Safety Legislation, including:

- Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005);
- Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299 of 2007), as amended;
- Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. 291 of 2013), as amended; and
- Safety, Health and Welfare at Work (Work at Height) Regulations 2006 (S.I. No. 318 of 2006).

During construction of Site B, all staff will be made aware of and adhere to the Health & Safety Authority's 'Guidelines on the Procurement, Design and Management Requirements of the Safety, Health and Welfare at Work (Construction) Regulations 2006'. This will encompass the use of all

necessary Personal Protective Equipment, Risk Assessment and Method Statements and adherence to the site Health and Safety Plan.

Fencing will be erected in areas of the site where uncontrolled access is not permitted. Appropriate health and safety signage will also be erected on this fencing and at locations around the site. Only appropriately qualified and trained personnel will be permitted to operate machinery onsite. Site B will not be accessible to members of the public during the construction phase. A Construction and Environmental Management Plan (CEMP) has been prepared for each site and submitted with the relevant planning applications, and if planning permission is granted, it is envisaged that the Developer will engage with the local authority to agree an appropriate Traffic Management plan for the purposes of the Construction phase so as to minimise the impact of the construction works on the local road network.

Residual Impact

With the implementation of the above, there will no significant negative impact on health and safety during the construction phase of Site B.

Significance of Effects

Based on the assessment above there will be no significant direct and indirect effects on health and safety during the construction phase of Site B.

5.6.2.2.2 **Employment and Investment**

There will be an opportunity for increased employment during the construction phase of Site B, as it is anticipated that there will be an increase in job opportunities for those working in the construction sector, building services and supplies, as well as in local businesses.

The injection of money in the form of salaries and wages to those employed during the construction phase of the project has the potential to result in an increase in household spending and demand for goods and services in the local area. This would result in local retailers and businesses experiencing a short-term positive impact on their cash flow. This will have a short-term slight positive indirect impact.

The construction of Site B will result in an influx of skilled people into the area, bringing specialist skills for both the construction and operational phases that could result in the transfer of these skills into the local workforce, thereby having a long-term positive impact on the local skills base.

5.6.2.2.3 **Population**

During the construction phase of Site B, there will be no negative impact on population, as it is predicted that the majority of staff and construction workers on site will be from the local community. The construction phase will have no impact on the population of the area in terms of changes to population trends or density, household size or age structure.

5.6.2.2.4 **Tourism and Amenity**

The Construction Phase of Site B may give rise to short-term imperceptible negative effects on nearby tourist attractions, namely Moygaddy House and Moygaddy Castle, through increases in road traffic volumes and noise emissions.

With regard to tourist attractions and amenity use around the site, described in Section 5.3.2, traffic management safety measures will be in place. Please see traffic impacts below for further details on proposed mitigation measures. Noise impacts will be mitigated for as outlined in Section 5.6.2.2.5 below.

5.6.2.2.5 Noise

Pre-Mitigation Impacts

There will be an increase in noise levels in the vicinity of Site B during the construction phase, as a result of heavy machinery and construction work which has the potential to cause a nuisance to sensitive receptors located closest to Site B. These impacts will be short-term in duration.

Construction noise at any given noise sensitive location will be variable throughout the construction project, depending on the activities underway and the distance from the main construction activities to the receiving properties. The potential noise impacts that will occur during the construction phase of Site B are further described in Chapter 10: Noise and Vibration.

Proposed Mitigation Measures

Best practice measures for noise control will be adhered to onsite during the construction phase of Site B in order to mitigate the slight short-term negative impact associated with this phase of the development. These measures will include:

- Construction operations will in general be confined to the period Monday-Friday 0700-1900 h, and Saturday 0800-1600 h.
- Where it is proposed to operate plant during the period 0700-0800 h at locations within 100 m of offsite receptors, standard 'beeper' reversing alarms will be replaced with flat spectrum alarms.
- Hooting will be prohibited onsite. Drivers of plant and vehicles will be instructed to avoiding hooting at all times.
- Plant used onsite during the construction phase will be maintained in a satisfactory condition and in accordance with manufacturer recommendations. In particular, exhaust silencers will be fitted and operating correctly at all times. Defective silencers will be immediately replaced.
- Queuing of trucks near offsite receptors will be prohibited.
- Machinery not in active use will be shut down.
- A site representative will be appointed as a liaison officer with the local community.
- Where evening or night-time operations are required, local residents will be notified through the liaison officer.
- All complaints of noise received during the construction phase will be logged in a register and investigated immediately. Details of follow-up action will be included in the register.
- Where it is proposed to import potentially noisy plant to the site, the potential impact of noise emissions will be assessed in advance.
- Where generators or compressors are required within 100 m of offsite receptors, or previously completed receptors onsite, these will be fitted with manufacturers' acoustic enclosures, or alternatively will be screened by a local acoustic screen or subsoil stockpile.
- Guidance set out in British Standard BS 5228-1:2009+A1:2014 with respect to noise control will be applied throughout the construction phase.

Residual Impact

Following the implementation of the above mitigation measures, there will be a short-term slight negative residual impact due to an increase in noise levels during the construction phase of Site B.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.2.6 **Dust and Air Quality**

Pre-Mitigation Impacts

Potential dust and vehicle emission sources during the construction phase of Site B include the use of machinery, plant equipment and on-site vehicular traffic. The entry and exit of vehicles from the site may result in the transfer of mud to the public road, particularly if the weather is wet. This may cause nuisance to residents and other road users. These impacts will not be significant and will be relatively short-term in duration. The potential dust impacts that may occur during the construction phase of Site B are further described in Chapter 9 of this ELAR: Air and Climate.

Proposed Mitigation Measures

The following measures will be enforced to ensure that dust and vehicle emission nuisance during the construction phase beyond the site boundary is minimised.

- All construction vehicles and plant will be maintained in good operational order while onsite, thereby minimising any emissions that arise.
- Overburden will be progressively removed from the working area in advance of construction.
- Dampening down the dust at the source by the use of barriers such as debris netting on scaffolding around the building to block dust escaping where the building is within 10m of existing residential properties.
- Site roadways will be maintained in a stoned hard-core condition not allowing soil to accumulate which when dry can create dust.
- Wheel wash equipment will be set up at the site exit gate for all construction vehicles to pass through prior to leaving the site thus ensuring that no dirt etc. is transported outside the site onto the roadways.
- Plant and equipment that have the potential to create volumes of dust will have appropriate attachments to allow water source to dampen dust to not allow it to get airborne.
- Road Sweepers may be deployed as required on public roadways in the unlikely event that mud or dust be transported from the site.

Residual Impact

Following the implementation of the above mitigation measures, there will be a short-term imperceptible negative impact due to dust emissions from the construction of Site B.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.2.7 **Traffic**

Pre-Mitigation Impacts

Construction traffic will be comprised of Heavy Goods Vehicle (HGV) and Light Goods Vehicle (LGV) movements involved in the delivery of construction materials to the site and the export of excess construction materials and plant from the site. A complete Traffic and Transportation Assessment

(TTA) of the Proposed Development has been carried out by O'Connor Sutton Cronin & Associates. The full results of the TTA are presented in Section 13.1 of Chapter 13: Material Assets.

The types of vehicles that will be required to negotiate the local network represent abnormal size loads and a detailed assessment of the geometry of the proposed route was therefore undertaken. This will have a temporary slight to moderate negative impact on existing road users, which will be minimised with the implementation of the mitigation measures included in the proposed traffic management plan.

Proposed Mitigation Measures

A Traffic Management Plan will be developed and implemented to ensure any impact is short term in duration and slight in significance during the construction of Site B. Prior to commencement of any works, the occupants of dwellings in the vicinity of the proposed works will be contacted and the scheduling of works will be made clear. Local access to properties will also be maintained throughout any construction works and local residents will also be supplied with the number of the works supervisor in order to ensure that disruption will be kept to a minimum.

Residual Impact

Once a traffic management plan is implemented for the construction phase of Site B, there will be a short-term imperceptible negative residual impact on local road users.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.2.8 Residential Amenity

Pre-Mitigation Impacts

Potential impacts on residential amenity during the construction phase of Site B could arise primarily due to noise, dust or changes to visual amenity. Detailed noise modelling has been carried out as part of this EIAR and show that due to the nature and size of the proposed development it is clear that construction phase noise emissions will vary, and it is not possible or practical to calculate a single sound power output figure for the entire site. With respect to surrounding noise sensitive receptors, worst case scenario emissions will arise when localised works are undertaken close to their respective boundaries.

The types of vehicles that will be required to negotiate the local network represent abnormal size loads and a detailed assessment of the geometry of the proposed route was therefore undertaken. This will have a temporary slight to moderate negative impact on existing road users, which will be minimised with the implementation of the mitigation measures included in the proposed traffic management plan.

Proposed Mitigation Measures

A Traffic Management Plan will be developed and incorporated into the CEMP and implemented to ensure any impact is short term in duration and slight in significance during the construction of Site B. Prior to commencement of any works, the occupants of dwellings in the vicinity of the proposed works will be contacted and the scheduling of works will be made clear. Local access to properties will also be maintained throughout any construction works and local residents will also be supplied with the number of the works supervisor in order to ensure that disruption will be kept to a minimum. The construction and environmental management plans (CEMP) include mitigation measures related to noise, dust and landscaping which will be in place to protect residential amenity. Construction

operations will also in general be confined to the period Monday-Friday 0700-1900 h, and Saturday 0800-1600 h, reducing noise emissions in the local area during social hours.

Residual Impact

Once a traffic management plan and noise mitigation measures are implemented for the construction phase of Site B, there will be a short-term imperceptible negative residual impact on local residents and road users.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.3 Strategic Housing Development (SHD: Site C)

5.6.2.3.1 Health and Safety

Pre-Mitigation Impacts

Construction of Site C will necessitate the presence of a construction site. Construction sites and the machinery used on them pose a potential health and safety hazard to construction workers if site rules are not properly implemented.

The presence and operation of heavy machinery and traffic entering and leaving the site also poses a potential risk to members of the public that make use of the surrounding access roads.

These are considered to be short-term potential significant negative impacts.

Proposed Mitigation Measures

Site C will be constructed and operated in accordance with all relevant Health and Safety Legislation, including:

- Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005);
- Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299 of 2007), as amended;
- Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. 291 of 2013), as amended; and
- Safety, Health and Welfare at Work (Work at Height) Regulations 2006 (S.I. No. 318 of 2006).

During construction of Site C, all staff will be made aware of and adhere to the Health & Safety Authority's '*Guidelines on the Procurement, Design and Management Requirements of the Safety, Health and Welfare at Work (Construction) Regulations 2006*'. This will encompass the use of all necessary Personal Protective Equipment, Risk Assessment and Method Statements and adherence to the site Health and Safety Plan.

Fencing will be erected in areas of the site where uncontrolled access is not permitted. Appropriate health and safety signage will also be erected on this fencing and at locations around the site. Only appropriately qualified and trained personnel will be permitted to operate machinery onsite. Site C will not be accessible to members of the public during the construction phase. A Construction and Environmental Management Plan (CEMP) has been prepared for each site and submitted with the relevant planning applications, and if planning permission is granted, it is envisaged that the Developer will engage with the local authority to agree an appropriate Traffic Management plan for the purposes

of the Construction phase so as to minimise the impact of the construction works on the local road network.

Residual Impact

With the implementation of the above, there will no significant negative impact on health and safety during the construction phase of Site C.

Significance of Effects

Based on the assessment above there will be no significant direct and indirect effects on health and safety during the construction phase of Site C.

5.6.2.3.2 **Employment and Investment**

There will be an opportunity for increased employment during the construction phase of Site C, as it is anticipated that there will be an increase in job opportunities for those working in the construction sector, building services and supplies, as well as in local businesses.

The injection of money in the form of salaries and wages to those employed during the construction phase of the project has the potential to result in an increase in household spending and demand for goods and services in the local area. This would result in local retailers and businesses experiencing a short-term positive impact on their cash flow. This will have a short-term slight positive indirect impact.

The construction of Site C will result in an influx of skilled people into the area, bringing specialist skills for both the construction and operational phases that could result in the transfer of these skills into the local workforce, thereby having a long-term positive impact on the local skills base.

5.6.2.3.3 **Population**

During the construction phase of Site C, there will be no negative impact on population, as it is predicted that the majority of staff and construction workers on site will be from the local community. The construction phase will have no impact on the population of the area in terms of changes to population trends or density, household size or age structure.

5.6.2.3.4 **Tourism and Amenity**

The Construction Phase of Site C may give rise to short-term imperceptible negative effects on nearby tourist attractions, namely Moygaddy House and Moygaddy Castle, through increases in road traffic volumes and noise emissions.

With regard to tourist attractions and amenity use around the site, described in Section 5.3.2, traffic management safety measures will be in place. Please see traffic impacts below for further details on proposed mitigation measures. Noise impacts will be mitigated for as outlined in Section 5.6.2.3.7 below.

5.6.2.3.5 **Noise**

Pre-Mitigation Impacts

There will be an increase in noise levels in the vicinity of Site C during the construction phase, as a result of heavy machinery and construction work which has the potential to cause a nuisance to sensitive receptors located closest to Site C. These impacts will be short-term in duration.

Construction noise at any given noise sensitive location will be variable throughout the construction project, depending on the activities underway and the distance from the main construction activities to the receiving properties. The potential noise impacts that will occur during the construction phase of Site C are further described in Chapter 10: Noise and Vibration.

With regard to the construction of the proposed underground services and utilities connecting to Kildare, excavation works may give rise to noise impacts on sensitive receptors in the area, however these noise impacts will be temporary in nature as the works move along the proposed route.

Proposed Mitigation Measures

Best practice measures for noise control will be adhered to onsite during the construction phase of Site C in order to mitigate the slight short-term negative impact associated with this phase of the development. These measures will include:

- Construction operations will in general be confined to the period Monday-Friday 0700-1900 h, and Saturday 0800-1600 h.
- Where it is proposed to operate plant during the period 0700-0800 h at locations within 100 m of offsite receptors, standard 'beeper' reversing alarms will be replaced with flat spectrum alarms.
- Hooting will be prohibited onsite. Drivers of plant and vehicles will be instructed to avoiding hooting at all times.
- Plant used onsite during the construction phase will be maintained in a satisfactory condition and in accordance with manufacturer recommendations. In particular, exhaust silencers will be fitted and operating correctly at all times. Defective silencers will be immediately replaced.
- Queuing of trucks near offsite receptors will be prohibited.
- Machinery not in active use will be shut down.
- A site representative will be appointed as a liaison officer with the local community.
- Where evening or night-time operations are required, local residents will be notified through the liaison officer.
- All complaints of noise received during the construction phase will be logged in a register and investigated immediately. Details of follow-up action will be included in the register.
- Where it is proposed to import potentially noisy plant to the site, the potential impact of noise emissions will be assessed in advance.
- Where generators or compressors are required within 100 m of offsite receptors, or previously completed receptors onsite, these will be fitted with manufacturers' acoustic enclosures, or alternatively will be screened by a local acoustic screen or subsoil stockpile.
- Guidance set out in British Standard BS 5228-1:2009+A1:2014 with respect to noise control will be applied throughout the construction phase.

Residual Impact

Following the implementation of the above mitigation measures, there will be a short-term slight negative residual impact due to an increase in noise levels during the construction phase of Site C.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.3.6 **Dust and Air Quality**

Pre-Mitigation Impacts

Potential dust and vehicle emission sources during the construction phase of Site C include the use of machinery, plant equipment and on-site vehicular traffic. The entry and exit of vehicles from the site may result in the transfer of mud to the public road, particularly if the weather is wet. This may cause nuisance to residents and other road users. These impacts will not be significant and will be relatively short-term in duration. The potential dust impacts that may occur during the construction phase of Site C are further described in Chapter 9 of this EIAR: Air and Climate.

Proposed Mitigation Measures

The following measures will be enforced to ensure that dust and vehicle emission nuisance during the construction phase beyond the site boundary is minimised.

- All construction vehicles and plant will be maintained in good operational order while onsite, thereby minimising any emissions that arise.
- Overburden will be progressively removed from the working area in advance of construction.
- Dampening down the dust at the source by the use of barriers such as debris netting on scaffolding around the building to block dust escaping where the building is within 10m of existing residential properties.
- Site roadways will be maintained in a stoned hard-core condition not allowing soil to accumulate which when dry can create dust.
- Wheel wash equipment will be set up at the site exit gate for all construction vehicles to pass through prior to leaving the site thus ensuring that no dirt etc. is transported outside the site onto the roadways.
- Plant and equipment that have the potential to create volumes of dust will have appropriate attachments to allow water source to dampen dust to not allow it to get airborne.
- Road Sweepers may be deployed as required on public roadways in the unlikely event that mud or dust be transported from the site.

Residual Impact

Following the implementation of the above mitigation measures, there will be a short-term imperceptible negative impact due to dust emissions from the construction of Site C.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.3.7 **Traffic**

Pre-Mitigation Impacts

Construction traffic will be comprised of Heavy Goods Vehicle (HGV) and Light Goods Vehicle (LGV) movements involved in the delivery of construction materials to the site and the export of excess construction materials and plant from the site. A complete Traffic and Transportation Assessment (TTA) of the Proposed Development has been carried out by O'Connor Sutton Cronin & Associates. The full results of the TTA are presented in Section 13.1 of Chapter 13: Material Assets.

The types of vehicles that will be required to negotiate the local network represent abnormal size loads and a detailed assessment of the geometry of the proposed route was therefore undertaken. This will

have a temporary slight to moderate negative impact on existing road users, which will be minimised with the implementation of the mitigation measures included in the proposed traffic management plan.

Proposed Mitigation Measures

A Traffic Management Plan will be developed and implemented to ensure any impact is short term in duration and slight in significance during the construction of Site C. Prior to commencement of any works, the occupants of dwellings in the vicinity of the proposed works will be contacted and the scheduling of works will be made clear. Local access to properties will also be maintained throughout any construction works and local residents will also be supplied with the number of the works supervisor in order to ensure that disruption will be kept to a minimum.

Residual Impact

Once a traffic management plan is implemented for the construction phase of Site C, there will be a short-term slight negative impact on local road users.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.3.8 Residential Amenity

Pre-Mitigation Impacts

Potential impacts on residential amenity during the construction phase of Site C could arise primarily due to noise, dust or changes to visual amenity. Detailed noise modelling has been carried out as part of this EIAR and show that due to the nature and size of the proposed development it is clear that construction phase noise emissions will vary, and it is not possible or practical to calculate a single sound power output figure for the entire site. With respect to surrounding noise sensitive receptors, worst case scenario emissions will arise when localised works are undertaken close to their respective boundaries.

The types of vehicles that will be required to negotiate the local network represent abnormal size loads and a detailed assessment of the geometry of the proposed route was therefore undertaken. This will have a temporary slight to moderate negative impact on existing road users, which will be minimised with the implementation of the mitigation measures included in the proposed traffic management plan.

Proposed Mitigation Measures

A Traffic Management Plan and the CEMP will be developed and implemented to ensure any impact is short term in duration and slight in significance during the construction of Site C. Prior to commencement of any works, the occupants of dwellings in the vicinity of the proposed works will be contacted and the scheduling of works will be made clear. Local access to properties will also be maintained throughout any construction works and local residents will also be supplied with the number of the works supervisor in order to ensure that disruption will be kept to a minimum. The construction and environmental management plans (CEMP) include mitigation measures related to noise, dust and landscaping which will be in place to protect residential amenity. Construction operations will also in general be confined to the period Monday-Friday 0700-1900 h, and Saturday 0800-1600 h, reducing noise emissions in the local area during social hours.

Residual Impact

Once the CEMP, traffic management plan and noise mitigation measures are implemented for the construction phase of Site C, there will be a short-term imperceptible negative residual impact on local residents and road users.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.4 Maynooth Outer Orbital Road (MOOR)

5.6.2.4.1 Health and Safety

Pre-Mitigation Impacts

Construction of the MOOR will necessitate the presence of a construction site. Construction sites and the machinery used on them pose a potential health and safety hazard to construction workers if site rules are not properly implemented.

The presence and operation of heavy machinery and traffic entering and leaving the site also poses a potential risk to members of the public that make use of the surrounding access roads.

These are considered to be short-term potential significant negative impacts.

Proposed Mitigation Measures

The MOOR will be constructed and operated in accordance with all relevant Health and Safety Legislation, including:

- Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005);
- Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299 of 2007), as amended;
- Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. 291 of 2013), as amended; and

During construction of the MOOR, all staff will be made aware of and adhere to the Health & Safety Authority's '*Guidelines on the Procurement, Design and Management Requirements of the Safety, Health and Welfare at Work (Construction) Regulations 2006*'. This will encompass the use of all necessary Personal Protective Equipment, Risk Assessment and Method Statements and adherence to the site Health and Safety Plan.

Fencing will be erected in areas of the site where uncontrolled access is not permitted. Appropriate health and safety signage will also be erected on this fencing and at locations around the site. Only appropriately qualified and trained personnel will be permitted to operate machinery onsite. The MOOR site will not be accessible to members of the public during the construction phase. A Construction and Environmental Management Plan (CEMP) has been prepared for each site and submitted with the relevant planning applications, and if planning permission is granted, it is envisaged that the Developer will engage with the local authority to agree an appropriate Traffic Management plan for the purposes of the Construction phase so as to minimise the impact of the construction works on the local road network.

Residual Impact

With the implementation of the mitigation measures above, there will be a short-term imperceptible negative impact on health and safety during the construction phase of the MOOR.

Significance of Effects

Based on the assessment above there will be no significant direct and indirect effects on health and safety during the construction phase of the MOOR.

5.6.2.4.2 **Employment and Investment**

There will be an opportunity for increased employment during the construction phase of the MOOR, as it is anticipated that there will be an increase in job opportunities for those working in the construction sector, building services and supplies, as well as in local businesses.

The injection of money in the form of salaries and wages to those employed during the construction phase of the project has the potential to result in an increase in household spending and demand for goods and services in the local area. This would result in local retailers and businesses experiencing a short-term positive impact on their cash flow. This will have a short-term slight positive indirect impact.

The construction of the MOOR will result in an influx of skilled people into the area, bringing specialist skills for the construction phase that could result in the transfer of these skills into the local workforce, thereby having a long-term positive impact on the local skills base.

5.6.2.4.3 **Population**

During the construction phase of the MOOR, there will be no negative impact on population, as it is predicted that the majority of staff and construction workers on site will be from the local community. The construction phase will have no impact on the population of the area in terms of changes to population trends or density, household size or age structure.

5.6.2.4.4 **Tourism and Amenity**

The Construction Phase of the MOOR may give rise to short-term imperceptible negative effects on nearby tourist attractions, namely Moygaddy House and Moygaddy Castle, through increases in road traffic volumes and noise emissions.

With regard to tourist attractions and amenity use around the site, described in Section 5.3.2, traffic management safety measures will be in place. Please see traffic impacts below for further details on proposed mitigation measures. Noise impacts will be mitigated for as outlined in Section 5.6.2.4.5 below.

5.6.2.4.5 **Noise**

Pre-Mitigation Impacts

There will be an increase in noise levels in the vicinity of the MOOR during the construction phase, as a result of heavy machinery and construction work which has the potential to cause a nuisance to sensitive receptors located closest to the MOOR. These impacts will be short-term in duration.

Construction noise at any given noise sensitive location will be variable throughout the construction project, depending on the activities underway and the distance from the main construction activities to the receiving properties. Excavation works may give rise to noise impacts on sensitive receptors in the area, however these noise impacts will be temporary in nature as the works move along the proposed

route. The potential noise impacts that will occur during the construction phase of the MOOR are further described in Chapter 10: Noise and Vibration.

Proposed Mitigation Measures

Best practice measures for noise control will be adhered to onsite during the construction phase of the MOOR in order to mitigate the slight short-term negative impact associated with this phase of the development. These measures will include:

- Construction operations will in general be confined to the period Monday-Friday 0700-1900 h, and Saturday 0800-1600 h.
- Where it is proposed to operate plant during the period 0700-0800 h at locations within 100 m of offsite receptors, standard ‘beeper’ reversing alarms will be replaced with flat spectrum alarms.
- Hooting will be prohibited onsite. Drivers of plant and vehicles will be instructed to avoiding hooting at all times.
- Plant used onsite during the construction phase will be maintained in a satisfactory condition and in accordance with manufacturer recommendations. In particular, exhaust silencers will be fitted and operating correctly at all times. Defective silencers will be immediately replaced.
- Queuing of trucks near offsite receptors will be prohibited.
- Machinery not in active use will be shut down.
- A site representative will be appointed as a liaison officer with the local community.
- Where evening or night-time operations are required, local residents will be notified through the liaison officer.
- All complaints of noise received during the construction phase will be logged in a register and investigated immediately. Details of follow-up action will be included in the register.
- Where it is proposed to import potentially noisy plant to the site, the potential impact of noise emissions will be assessed in advance.
- Where generators or compressors are required within 100 m of offsite receptors, or previously completed receptors onsite, these will be fitted with manufacturers’ acoustic enclosures, or alternatively will be screened by a local acoustic screen or subsoil stockpile.
- Guidance set out in British Standard BS 5228-1:2009+A1:2014 with respect to noise control will be applied throughout the construction phase.

Residual Impact

Following the implementation of the above mitigation measures, there will be a short-term imperceptible negative residual impact due to an increase in noise levels during the construction phase of the MOOR.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.4.6 **Dust and Air Quality**

Pre-Mitigation Impacts

Potential dust and vehicle emission sources during the construction phase of the MOOR include the use of machinery, plant equipment and on-site vehicular traffic. The entry and exit of vehicles from the site may result in the transfer of mud to the public road, particularly if the weather is wet. This may

cause nuisance to residents and other road users. These impacts will not be significant and will be relatively short-term in duration. The potential dust impacts that may occur during the construction phase of the MOOR are further described in Chapter 9 of this EIAR: Air and Climate.

Proposed Mitigation Measures

The following measures will be enforced to ensure that dust and vehicle emission nuisance during the construction phase beyond the site boundary is minimised.

- All construction vehicles and plant will be maintained in good operational order while onsite, thereby minimising any emissions that arise.
- Overburden will be progressively removed from the working area in advance of construction.
- Dampening down the dust at the source by the use of barriers such as debris netting on scaffolding around the building to block dust escaping where the building is within 10m of existing residential properties.
- Site roadways will be maintained in a stoned hard-core condition not allowing soil to accumulate which when dry can create dust.
- Wheel wash equipment will be set up at the site exit gate for all construction vehicles to pass through prior to leaving the site thus ensuring that no dirt etc. is transported outside the site onto the roadways.
- Plant and equipment that have the potential to create volumes of dust will have appropriate attachments to allow water source to dampen dust to not allow it to get airborne.
- Road Sweepers may be deployed as required on public roadways in the unlikely event that mud or dust be transported from the site.

Residual Impact

Following the implementation of the above mitigation measures, there will be a short-term imperceptible negative impact due to dust emissions from the construction of the MOOR.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.4.7 **Traffic**

Pre-Mitigation Impacts

Construction traffic will be comprised of Heavy Goods Vehicle (HGV) and Light Goods Vehicle (LGV) movements involved in the delivery of construction materials to the site and the export of excess construction materials and plant from the site. A complete Traffic and Transportation Assessment (TTA) of the MOOR has been carried out by O'Connor Sutton Cronin & Associates. The full results of the TTA are presented in Section 13.1 of Chapter 13: Material Assets.

The types of vehicles that will be required to negotiate the local network represent abnormal size loads and a detailed assessment of the geometry of the proposed route was therefore undertaken. This will have a temporary slight to moderate negative impact on existing road users, which will be minimised with the implementation of the mitigation measures included in the proposed traffic management plan.

Proposed Mitigation Measures

A Traffic Management Plan will be developed and implemented to ensure any impact is short term in duration and slight in significance during the construction of the MOOR. Prior to commencement of any works, the occupants of dwellings in the vicinity of the proposed works will be contacted and the scheduling of works will be made clear. Local access to properties will also be maintained throughout any construction works and local residents will also be supplied with the number of the works supervisor in order to ensure that disruption will be kept to a minimum.

Residual Impact

Once the CEMP and a traffic management plan is implemented for the construction phase of the MOOR, there will be a short-term slight negative residual impact on local road users.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.4.8 Residential Amenity

Pre-Mitigation Impacts

Potential impacts on residential amenity during the construction phase of the MOOR could arise primarily due to noise, dust or changes to visual amenity. Detailed noise modelling has been carried out as part of this EIAR and show that due to the nature and size of the MOOR it is clear that construction phase noise emissions will vary, and it is not possible or practical to calculate a single sound power output figure for the entire site. With respect to surrounding noise sensitive receptors, worst case scenario emissions will arise when localised works are undertaken close to their respective boundaries.

The types of vehicles that will be required to negotiate the local network represent abnormal size loads and a detailed assessment of the geometry of the proposed route was therefore undertaken. This will have a temporary slight to moderate negative impact on existing road users, which will be minimised with the implementation of the mitigation measures included in the proposed traffic management plan.

Proposed Mitigation Measures

A Traffic Management Plan will be developed and implemented to ensure any impact is short term in duration and slight in significance during the construction of the MOOR. Prior to commencement of any works, the occupants of dwellings in the vicinity of the proposed works will be contacted and the scheduling of works will be made clear. Local access to properties will also be maintained throughout any construction works and local residents will also be supplied with the number of the works supervisor in order to ensure that disruption will be kept to a minimum. The construction and environmental management plans (CEMP) include mitigation measures related to noise, dust and landscaping which will be in place to protect residential amenity. Construction operations will also in general be confined to the period Monday-Friday 0700-1900 h, and Saturday 0800-1600 h, reducing noise emissions in the local area during social hours.

Residual Impact

Once the CEMP and a traffic management plan and noise mitigation measures are implemented for the construction phase of the MOOR, there will be a short-term imperceptible negative residual impact on local residents and road users.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.5 Kildare Bridge

5.6.2.5.1 Health and Safety

Pre-Mitigation Impacts

Construction of the works included within the Kildare Bridge application will necessitate the presence of a construction site. Construction sites and the machinery used on them pose a potential health and safety hazard to construction workers if site rules are not properly implemented.

The presence and operation of heavy machinery and traffic entering and leaving the site also poses a potential risk to members of the public that make use of the surrounding access roads.

These are considered to be short-term potential significant negative impacts.

Proposed Mitigation Measures

The Kildare Bridge works will be constructed and operated in accordance with all relevant Health and Safety Legislation, including:

- Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005);
- Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299 of 2007), as amended;
- Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. 291 of 2013), as amended; and
- Safety, Health and Welfare at Work (Work at Height) Regulations 2006 (S.I. No. 318 of 2006).

During construction of the Kildare Bridge works, all staff will be made aware of and adhere to the Health & Safety Authority's '*Guidelines on the Procurement, Design and Management Requirements of the Safety, Health and Welfare at Work (Construction) Regulations 2006*'. This will encompass the use of all necessary Personal Protective Equipment, Risk Assessment and Method Statements and adherence to the site Health and Safety Plan.

Fencing will be erected in areas of the site where uncontrolled access is not permitted. Appropriate health and safety signage will also be erected on this fencing and at locations around the site. Only appropriately qualified and trained personnel will be permitted to operate machinery onsite. The Kildare Bridge site works will not be accessible to members of the public during the construction phase.

A Construction and Environmental Management Plan (CEMP) has been prepared for each site and submitted with the relevant planning applications, and if planning permission is granted, it is envisaged that the Developer will engage with the local authority to agree an appropriate Traffic Management plan for the purposes of the Construction phase so as to minimise the impact of the construction works on the local road network.

Residual Impact

With the implementation of the mitigation measures above, there will be a short-term imperceptible negative impact on health and safety during the construction phase of the Kildare Bridge

Significance of Effects

Based on the assessment above there will be no significant direct and indirect effects on health and safety during the construction phase of the Kildare Bridge works.

5.6.2.5.2 **Employment and Investment**

There will be an opportunity for increased employment during the construction phase of the Kildare Bridge works, as it is anticipated that there will be an increase in job opportunities for those working in the construction sector, building services and supplies, as well as in local businesses.

The injection of money in the form of salaries and wages to those employed during the construction phase of the project has the potential to result in an increase in household spending and demand for goods and services in the local area. This would result in local retailers and businesses experiencing a short-term positive impact on their cash flow. This will have a short-term slight positive indirect impact.

The construction of the Kildare Bridge works will result in an influx of skilled people into the area, bringing specialist skills for the construction phase that could result in the transfer of these skills into the local workforce, thereby having a long-term positive impact on the local skills base.

5.6.2.5.3 **Population**

During the construction phase of the Kildare Bridge works, there will be no negative impact on population, as it is predicted that the majority of staff and construction workers on site will be from the local community. The construction phase will have no impact on the population of the area in terms of changes to population trends or density, household size or age structure.

5.6.2.5.4 **Tourism and Amenity**

The Construction Phase of the Kildare Bridge works may give rise to short-term imperceptible negative effects on nearby tourist attractions, namely Moygaddy House and Moygaddy Castle, through increases in road traffic volumes and noise emissions.

With regard to tourist attractions and amenity use around the site, described in Section 5.3.2, traffic management safety measures will be in place. Please see traffic impacts below for further details on proposed mitigation measures. Noise impacts will be mitigated for as outlined in Section 5.6.2.5.5 below.

5.6.2.5.5 **Noise**

Pre-Mitigation Impacts

There will be an increase in noise levels in the vicinity of the Kildare Bridge works during the construction phase, as a result of heavy machinery and construction work which has the potential to cause a nuisance to sensitive receptors located closest to the Kildare Bridge works. These impacts will be short-term in duration.

Construction noise at any given noise sensitive location will be variable throughout the construction project, depending on the activities underway and the distance from the main construction activities to the receiving properties. Excavation works may give rise to noise impacts on sensitive receptors in the

area, however these noise impacts will be temporary in nature as the works move along the proposed route. The potential noise impacts that will occur during the construction phase of the Kildare Bridge works are further described in Chapter 10: Noise and Vibration.

Proposed Mitigation Measures

Best practice measures for noise control will be adhered to onsite during the construction phase of the Kildare Bridge works in order to mitigate the slight short-term negative impact associated with this phase of the development. These measures will include:

- Construction operations will in general be confined to the period Monday-Friday 0700-1900 h, and Saturday 0800-1600 h.
- Where it is proposed to operate plant during the period 0700-0800 h at locations within 100 m of offsite receptors, standard ‘beeper’ reversing alarms will be replaced with flat spectrum alarms.
- Hooting will be prohibited onsite. Drivers of plant and vehicles will be instructed to avoiding hooting at all times.
- Plant used onsite during the construction phase will be maintained in a satisfactory condition and in accordance with manufacturer recommendations. In particular, exhaust silencers will be fitted and operating correctly at all times. Defective silencers will be immediately replaced.
- Queuing of trucks near offsite receptors will be prohibited.
- Machinery not in active use will be shut down.
- A site representative will be appointed as a liaison officer with the local community.
- Where evening or night-time operations are required, local residents will be notified through the liaison officer.
- All complaints of noise received during the construction phase will be logged in a register and investigated immediately. Details of follow-up action will be included in the register.
- Where it is proposed to import potentially noisy plant to the site, the potential impact of noise emissions will be assessed in advance.
- Where generators or compressors are required within 100 m of offsite receptors, or previously completed receptors onsite, these will be fitted with manufacturers’ acoustic enclosures, or alternatively will be screened by a local acoustic screen or subsoil stockpile.
- Guidance set out in British Standard BS 5228-1:2009+A1:2014 with respect to noise control will be applied throughout the construction phase.

Residual Impact

Following the implementation of the above mitigation measures, there will be a short-term imperceptible negative residual impact due to an increase in noise levels during the construction phase of the Kildare Bridge works.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.5.6 **Dust and Air Quality**

Pre-Mitigation Impacts

Potential dust and vehicle emission sources during the construction phase of the Kildare Bridge works include the use of machinery, plant equipment and on-site vehicular traffic. The entry and exit of

vehicles from the site may result in the transfer of mud to the public road, particularly if the weather is wet. This may cause nuisance to residents and other road users. These impacts will not be significant and will be relatively short-term in duration. The potential dust impacts that may occur during the construction phase of the Kildare Bridge works are further described in Chapter 9 of this EIAR: Air and Climate.

Proposed Mitigation Measures

The following measures will be enforced to ensure that dust and vehicle emission nuisance during the construction phase beyond the site boundary is minimised.

- All construction vehicles and plant will be maintained in good operational order while onsite, thereby minimising any emissions that arise.
- Overburden will be progressively removed from the working area in advance of construction.
- Dampening down the dust at the source by the use of barriers such as debris netting on scaffolding around the building to block dust escaping where the building is within 10m of existing residential properties.
- Site roadways will be maintained in a stoned hard-core condition not allowing soil to accumulate which when dry can create dust.
- Wheel wash equipment will be set up at the site exit gate for all construction vehicles to pass through prior to leaving the site thus ensuring that no dirt etc. is transported outside the site onto the roadways.
- Plant and equipment that have the potential to create volumes of dust will have appropriate attachments to allow water source to dampen dust to not allow it to get airborne.
- Road Sweepers may be deployed as required on public roadways in the unlikely event that mud or dust be transported from the site.

Residual Impact

Following the implementation of the above mitigation measures, there will be a short-term imperceptible negative impact due to dust emissions from the construction of the Kildare Bridge works.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.5.7 **Traffic**

Pre-Mitigation Impacts

Construction traffic will be comprised of Heavy Goods Vehicle (HGV) and Light Goods Vehicle (LGV) movements involved in the delivery of construction materials to the site and the export of excess construction materials and plant from the site. A complete Traffic and Transportation Assessment (TTA) of the Proposed Development has been carried out by O'Connor Sutton Cronin & Associates. The full results of the TTA are presented in Section 13.1 of Chapter 13: Material Assets.

The types of vehicles that will be required to negotiate the local network represent abnormal size loads and a detailed assessment of the geometry of the proposed route was therefore undertaken. This will have a temporary slight to moderate negative impact on existing road users, which will be minimised with the implementation of the mitigation measures included in the proposed traffic management plan.

Proposed Mitigation Measures

A CEMP and Traffic Management Plan will be developed and implemented to ensure any impact is short term in duration and slight in significance during the construction of the Kildare Bridge works. Prior to commencement of any works, the occupants of dwellings in the vicinity of the proposed works will be contacted and the scheduling of works will be made clear. Local access to properties will also be maintained throughout any construction works and local residents will also be supplied with the number of the works supervisor in order to ensure that disruption will be kept to a minimum.

Residual Impact

Once a CEMP and traffic management plan is implemented for the construction phase of the Kildare Bridge works, there will be a short-term imperceptible negative residual impact on local road users.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.5.8 **Residential Amenity**

Pre-Mitigation Impacts

Potential impacts on residential amenity during the construction phase of Kildare Bridge works could arise primarily due to noise, dust or changes to visual amenity. Detailed noise modelling has been carried out as part of this EIAR and show that due to the nature and size of the proposed development it is clear that construction phase noise emissions will vary, and it is not possible or practical to calculate a single sound power output figure for the entire site. With respect to surrounding noise sensitive receptors, worst case scenario emissions will arise when localised works are undertaken close to their respective boundaries.

The types of vehicles that will be required to negotiate the local network represent abnormal size loads and a detailed assessment of the geometry of the proposed route was therefore undertaken. This will have a temporary slight to moderate negative impact on existing road users, which will be minimised with the implementation of the mitigation measures included in the proposed traffic management plan.

Proposed Mitigation Measures

A CEMP and Traffic Management Plan will be developed and implemented to ensure any impact is short term in duration and slight in significance during the construction of Kildare Bridge works. Prior to commencement of any works, the occupants of dwellings in the vicinity of the proposed works will be contacted and the scheduling of works will be made clear. Local access to properties will also be maintained throughout any construction works and local residents will also be supplied with the number of the works supervisor in order to ensure that disruption will be kept to a minimum. The construction and environmental management plans (CEMP) include mitigation measures related to noise, dust and landscaping which will be in place to protect residential amenity. Construction operations will also in general be confined to the period Monday-Friday 0700-1900 h, and Saturday 0800-1600 h, reducing noise emissions in the local area during social hours.

Residual Impact

Once a CEMP and traffic management plan and noise mitigation measures are implemented for the construction phase of Kildare Bridge works, there will be a short-term imperceptible negative residual impact on local residents and road users.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.6 Moyglare Bridge

5.6.2.6.1 Health and Safety

Pre-Mitigation Impacts

Construction of the Moyglare Bridge will necessitate the presence of a construction site. Construction sites and the machinery used on them pose a potential health and safety hazard to construction workers if site rules are not properly implemented.

The presence and operation of heavy machinery and traffic entering and leaving the site also poses a potential risk to members of the public that make use of the surrounding access roads.

These are considered to be short-term potential significant negative impacts.

Proposed Mitigation Measures

The Moyglare Bridge will be constructed and operated in accordance with all relevant Health and Safety Legislation, including:

- Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005);
- Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299 of 2007), as amended;
- Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. 291 of 2013), as amended; and
- Safety, Health and Welfare at Work (Work at Height) Regulations 2006 (S.I. No. 318 of 2006).

During construction of the Moyglare Bridge, all staff will be made aware of and adhere to the Health & Safety Authority's '*Guidelines on the Procurement, Design and Management Requirements of the Safety, Health and Welfare at Work (Construction) Regulations 2006*'. This will encompass the use of all necessary Personal Protective Equipment, Risk Assessment and Method Statements and adherence to the site Health and Safety Plan.

Fencing will be erected in areas of the site where uncontrolled access is not permitted. Appropriate health and safety signage will also be erected on this fencing and at locations around the site. Only appropriately qualified and trained personnel will be permitted to operate machinery onsite. The Moyglare Bridge site will not be accessible to members of the public during the construction phase.

A Construction and Environmental Management Plan (CEMP) has been prepared for each site and submitted with the relevant planning applications, and if planning permission is granted, it is envisaged that the Developer will engage with the local authority to agree an appropriate Traffic Management plan for the purposes of the Construction phase so as to minimise the impact of the construction works on the local road network.

Residual Impact

With the implementation of the mitigation measures above, there will be a short-term imperceptible negative impact on health and safety during the construction phase of the Moyglare Bridge.

Significance of Effects

Based on the assessment above there will be no significant direct and indirect effects on health and safety during the construction phase of the Moyglare Bridge.

5.6.2.6.2 **Employment and Investment**

There will be an opportunity for increased employment during the construction phase of the Moyglare Bridge, as it is anticipated that there will be an increase in job opportunities for those working in the construction sector, building services and supplies, as well as in local businesses.

The injection of money in the form of salaries and wages to those employed during the construction phase of the project has the potential to result in an increase in household spending and demand for goods and services in the local area. This would result in local retailers and businesses experiencing a short-term positive impact on their cash flow. This will have a short-term slight positive indirect impact.

The construction of the Moyglare Bridge will result in an influx of skilled people into the area, bringing specialist skills for the construction phase that could result in the transfer of these skills into the local workforce, thereby having a long-term positive impact on the local skills base.

5.6.2.6.3 **Population**

During the construction phase of the Moyglare Bridge, there will be no negative impact on population, as it is predicted that the majority of staff and construction workers on site will be from the local community. The construction phase will have no impact on the population of the area in terms of changes to population trends or density, household size or age structure.

5.6.2.6.4 **Tourism and Amenity**

The Construction Phase of the Moyglare Bridge may give rise to short-term imperceptible negative effects on nearby tourist attractions, namely Moygaddy House and Moygaddy Castle, through increases in road traffic volumes and noise emissions.

With regard to tourist attractions and amenity use around the site, described in Section 5.3.2, traffic management safety measures will be in place. Please see traffic impacts below for further details on proposed mitigation measures. Noise impacts will be mitigated for as outlined in Section 5.6.2.6.5 below.

5.6.2.6.5 **Noise**

Pre-Mitigation Impacts

There will be an increase in noise levels in the vicinity of the Moyglare Bridge during the construction phase, as a result of heavy machinery and construction work which has the potential to cause a nuisance to sensitive receptors located closest to the Moyglare Bridge. These impacts will be short-term in duration.

Construction noise at any given noise sensitive location will be variable throughout the construction project, depending on the activities underway and the distance from the main construction activities to the receiving properties. Excavation works may give rise to noise impacts on sensitive receptors in the

area, however these noise impacts will be temporary in nature as the works move along the proposed route. The potential noise impacts that will occur during the construction phase of the Moyglare Bridge are further described in Chapter 10: Noise and Vibration.

Proposed Mitigation Measures

Best practice measures for noise control will be adhered to onsite during the construction phase of the Moyglare Bridge in order to mitigate the slight short-term negative impact associated with this phase of the development. These measures will include:

- Construction operations will in general be confined to the period Monday-Friday 0700-1700 h, and Saturday 0800-1600 h.
- Where it is proposed to operate plant during the period 0700-0800 h at locations within 100 m of offsite receptors, standard ‘beeper’ reversing alarms will be replaced with flat spectrum alarms.
- Hooting will be prohibited onsite. Drivers of plant and vehicles will be instructed to avoiding hooting at all times.
- Plant used onsite during the construction phase will be maintained in a satisfactory condition and in accordance with manufacturer recommendations. In particular, exhaust silencers will be fitted and operating correctly at all times. Defective silencers will be immediately replaced.
- Queuing of trucks near offsite receptors will be prohibited.
- Machinery not in active use will be shut down.
- A site representative will be appointed as a liaison officer with the local community.
- Where evening or night-time operations are required, local residents will be notified through the liaison officer.
- All complaints of noise received during the construction phase will be logged in a register and investigated immediately. Details of follow-up action will be included in the register.
- Where it is proposed to import potentially noisy plant to the site, the potential impact of noise emissions will be assessed in advance.
- Where generators or compressors are required within 100 m of offsite receptors, or previously completed receptors onsite, these will be fitted with manufacturers’ acoustic enclosures, or alternatively will be screened by a local acoustic screen or subsoil stockpile.
- Guidance set out in British Standard BS 5228-1:2009+A1:2014 with respect to noise control will be applied throughout the construction phase.

Residual Impact

Following the implementation of the above mitigation measures, there will be a short-term imperceptible negative residual impact due to an increase in noise levels during the construction phase of the Moyglare Bridge.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.6.6 **Dust and Air Quality**

Pre-Mitigation Impacts

Potential dust and vehicle emission sources during the construction phase of the Moyglare Bridge include the use of machinery, plant equipment and on-site vehicular traffic. The entry and exit of

vehicles from the site may result in the transfer of mud to the public road, particularly if the weather is wet. This may cause nuisance to residents and other road users. These impacts will not be significant and will be relatively short-term in duration. The potential dust impacts that may occur during the construction phase of the Moyglare Bridge are further described in Chapter 9 of this EIAR: Air and Climate.

Proposed Mitigation Measures

The following measures will be enforced to ensure that dust and vehicle emission nuisance during the construction phase beyond the site boundary is minimised.

- All construction vehicles and plant will be maintained in good operational order while onsite, thereby minimising any emissions that arise.
- Overburden will be progressively removed from the working area in advance of construction.
- Dampening down the dust at the source by the use of barriers such as debris netting on scaffolding around the building to block dust escaping where the building is within 10m of existing residential properties.
- Site roadways will be maintained in a stoned hard-core condition not allowing soil to accumulate which when dry can create dust.
- Wheel wash equipment will be set up at the site exit gate for all construction vehicles to pass through prior to leaving the site thus ensuring that no dirt etc. is transported outside the site onto the roadways.
- Plant and equipment that have the potential to create volumes of dust will have appropriate attachments to allow water source to dampen dust to not allow it to get airborne.
- Road Sweepers may be deployed as required on public roadways in the unlikely event that mud or dust be transported from the site.

Residual Impact

Following the implementation of the above mitigation measures, there will be a short-term imperceptible negative impact due to dust emissions from the construction of the Moyglare Bridge.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.6.7 **Traffic**

Pre-Mitigation Impacts

Construction traffic will be comprised of Heavy Goods Vehicle (HGV) and Light Goods Vehicle (LGV) movements involved in the delivery of construction materials to the site and the export of excess construction materials and plant from the site. A complete Traffic and Transportation Assessment (TTA) of the Proposed Development has been carried out by O'Connor Sutton Cronin & Associates. The full results of the TTA are presented in Section 13.1 of Chapter 13: Material Assets.

The types of vehicles that will be required to negotiate the local network represent abnormal size loads and a detailed assessment of the geometry of the proposed route was therefore undertaken. This will have a temporary slight to moderate negative impact on existing road users, which will be minimised with the implementation of the mitigation measures included in the proposed traffic management plan.

Proposed Mitigation Measures

A CEMP and Traffic Management Plan will be developed and implemented to ensure any impact is short term in duration and slight in significance during the construction of the Moyglare Bridge. Prior to commencement of any works, the occupants of dwellings in the vicinity of the proposed works will be contacted and the scheduling of works will be made clear. Local access to properties will also be maintained throughout any construction works and local residents will also be supplied with the number of the works supervisor in order to ensure that disruption will be kept to a minimum.

Residual Impact

Once a CEMP and traffic management plan is implemented for the construction phase of the Moyglare Bridge, there will be a short-term slight negative residual impact on local road users.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.2.6.8 Residential Amenity

Pre-Mitigation Impacts

Potential impacts on residential amenity during the construction phase of Moyglare Bridge could arise primarily due to noise, dust or changes to visual amenity. Detailed noise modelling has been carried out as part of this EIAR and show that due to the nature and size of the proposed development it is clear that construction phase noise emissions will vary, and it is not possible or practical to calculate a single sound power output figure for the entire site. With respect to surrounding noise sensitive receptors, worst case scenario emissions will arise when localised works are undertaken close to their respective boundaries.

The types of vehicles that will be required to negotiate the local network represent abnormal size loads and a detailed assessment of the geometry of the proposed route was therefore undertaken. This will have a temporary slight to moderate negative impact on existing road users, which will be minimised with the implementation of the mitigation measures included in the proposed traffic management plan.

Proposed Mitigation Measures

A CEMP and Traffic Management Plan will be developed and implemented to ensure any impact is short term in duration and slight in significance during the construction of Moyglare Bridge. Prior to commencement of any works, the occupants of dwellings in the vicinity of the proposed works will be contacted and the scheduling of works will be made clear. Local access to properties will also be maintained throughout any construction works and local residents will also be supplied with the number of the works supervisor in order to ensure that disruption will be kept to a minimum. The construction and environmental management plans (CEMP) include mitigation measures related to noise, dust and landscaping which will be in place to protect residential amenity. Construction operations will also in general be confined to the period Monday-Friday 0700-1900 h, and Saturday 0800-1600 h, reducing noise emissions in the local area during social hours.

Residual Impact

Once a traffic management plan and noise mitigation measures are implemented for the construction phase of Moyglare Bridge, there will be a short-term imperceptible negative residual impact on local residents and road users.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.6.3 Operational Phase

The effects set out below relate to the operational phase of the Proposed Development. During the operational phase, all potential impacts on the Proposed Development are assessed. The construction impacts may affect all aspects of the Proposed Development in some manner and occur simultaneously within the expected construction programme.

5.6.3.1 Strategic Employment Zone (Site A)

5.6.3.1.1 Health and Safety

Upon completion, Site A is unlikely to have any significant impact on human health or health and safety through the operation of the proposed office buildings.

Residual Impacts

No negative impacts.

Significance of Effects

Based on the assessment above there will be no significant effects.

5.6.3.1.2 Employment and Investment

Site A includes for a strategic employment zone consisting of 3 no. standalone offices. Site A will facilitate employment in the creation of temporary and full-time employment positions consisting of both office-based roles in the proposed commercial units. All of these elements of Site A will provide for approximately 1,000 full-time positions post-construction.

Residual Impact

Long-term significant positive impact.

Significance of Effects

Site A includes for a strategic employment zone consisting of 3 no. standalone office buildings. Based on the assessment above there will be a long-term significant positive impact for employment and investment opportunities in the local area associated with Site A.

5.6.3.1.3 Population

Site A includes for a strategic employment zone consisting of 3 no. standalone office buildings. Site A will have a slight positive impact on the local population, providing employment opportunities to the local population.

Residual Impact

Slight long-term positive impact.

Significance of Effects

Based on the assessment above there will be a slight long-term positive impact for Population in the local area.

5.6.3.1.4 **Tourism and Amenity**

Site A includes for road widening and upgrade works, new junctions, cycle lanes and improved facilities for cyclists and pedestrians. This improved access to the area from Maynooth town and surround areas, will benefit the existing tourism and amenity features surrounding Site A, namely Moygaddy House and Moygaddy Castle to the west and Carton House Demesne to the east. The improved facilities and access to these areas, following the construction of Site A, will offer a long term significant positive impact on local tourism and amenities.

Residual Impact

Long-term significant positive impact.

Significance of Effects

Based on the assessment above there will be a long-term positive impact for tourism in the local area associated with Site A.

5.6.3.1.5 **Residential Amenity**

Pre-Mitigation Impacts

Potential impacts on residential amenity during the operational phase of Site A could arise primarily due to noise, changes to visual amenity and potential impact of dust and traffic.

Noise

There will be an imperceptible increase in noise levels in the vicinity of Site A once the development has been built, as a result of air handling units (AHUs). The potential noise impacts that will occur during the operational phase of Site A are further described in Chapter 10: Noise and Vibration, which shows that will be capable of meeting all required guidelines in relation to noise thresholds.

Visual Amenity

The visual impact of Site A is addressed comprehensively in Chapter 11: Landscape and Visual. The location of the Site A has been strategically sited to screen it within localised topography and vegetation which mitigates potential visual effects.

Dust and Air Quality

There will be no impact on human health from dust emissions in the vicinity of Site A once the development has been built and all construction vehicles and personal are offsite.

Any further works which may need to occur on site as part of maintenance and repairs during the operation of the site, may cause slight short-term dust emissions, and is unlikely to have any negative significant impact on human health. The potential dust and air quality impacts that will occur during the operational phase of Site A are further described in Chapter 9 of this EIAR: Air and Climate.

No mitigation will be required on site as the impact of Site A once constructed, is assessed as being imperceptible.

Traffic

As detailed in Chapter 13, Section 13.1, the development of Site A will have a long-term moderate positive impact on the receiving traffic and transport network.

Proposed Mitigation Measures

All mitigation as outlined under noise and vibration, dust, traffic, and visual amenity in this EIAR will be implemented in order to reduce, insofar as possible, impacts on residential amenity at properties located in the vicinity of Site A.

Residual Impact

With the implementation of the mitigation measures outlined in relation to noise and vibration, dust, traffic, and visual amenity, Site A will have an imperceptible impact on residential amenity.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects on residential amenity.

5.6.3.2 Healthcare Facilities (Site B)

5.6.3.2.1 Health and Safety

Upon completion, Site B is unlikely to have any significant impact on human health or health and safety through the operation of the proposed healthcare facilities.

Residual Impacts

No negative impacts.

Significance of Effects

Based on the assessment above there will be no significant effects.

5.6.3.2.2 Employment and Investment

Site B includes for community infrastructure use comprising a Nursing Home and Primary Care Centre. Site B will facilitate employment in the creation of temporary and full-time employment positions consisting of healthcare roles in the proposed primary care building and nursing home facility as well as operations management and administration roles.

Residual Impact

Long-term significant positive impact.

Significance of Effects

Site B includes for community infrastructure comprising a Nursing Home and Primary Care Centre. Based on the assessment above there will be a long-term significant positive impact on healthcare, employment and investment opportunities in the local area associated with Site B.

5.6.3.2.3 **Population**

Site B includes for community infrastructure comprising of a Nursing Home and Primary Care Centre. Site B will have a slight positive impact on the local population, providing much needed accommodation for older persons in the area through the provision of the proposed nursing home along with employment opportunities in the area. The provision of a Primary Care Centre will improve non-acute healthcare facilities available to the local community.

Residual Impact

Slight long-term positive impact.

Significance of Effects

Based on the assessment above there will be a slight long-term positive impact for Population in the local area.

5.6.3.2.4 **Tourism and Amenity**

Site B includes for road widening and upgrade works, new junctions, cycle lanes and improved facilities for cyclists and pedestrians. This improved access to the area from Maynooth town and surrounding areas, will benefit the existing tourism and amenity features surrounding Site B, namely Moygaddy House and Moygaddy Castle to the west and Carton House Demesne to the east. The improved facilities and access to these areas, following the construction of Site B, will offer a long term significant positive impact on local tourism and amenities.

Residual Impact

Long-term significant positive impact.

Significance of Effects

Based on the assessment above there will be a long-term positive impact for tourism in the local area associated with Site B.

5.6.3.2.5 **Residential Amenity**

Pre-Mitigation Impacts

Potential impacts on residential amenity during the operational phase of Site B could arise primarily due to noise, changes to visual amenity and potential impact of dust and traffic.

Noise

There will be an imperceptible increase in noise levels in the vicinity of Site B once the development has been built, as a result of increased traffic volumes in the area. The potential noise impacts that will

occur during the operational phase of Site B are further described in Chapter 10: Noise and Vibration, which shows that will be capable of meeting all required guidelines in relation to noise thresholds.

Visual Amenity

The visual impact of Site B is addressed comprehensively in Chapter 11: Landscape and Visual. The location of the Site B has been strategically sited to screen it within localised topography and vegetation which mitigates potential visual effects.

Dust and Air Quality

There will be no impact on human health from dust emissions in the vicinity of Site B once the development has been built and all construction vehicles and personal are offsite.

Any further works which may need to occur on site as part of maintenance and repairs during the operation of the site, may cause slight short-term dust emissions, and is unlikely to have any negative significant impact on human health. The potential dust and air quality impacts that will occur during the operational phase of Site B are further described in Chapter 9 of this EIAR: Air and Climate.

No mitigation will be required on site as the impact of Site B once constructed, is assessed as being imperceptible.

Traffic

As detailed in Chapter 13, Section 13.1, proposed development will have a long-term moderate positive impact on the receiving traffic and transport network.

Proposed Mitigation Measures

All mitigation as outlined under noise and vibration, dust, traffic, and visual amenity in this EIAR will be implemented in order to reduce, insofar as possible, impacts on residential amenity at properties located in the vicinity of Site B.

Residual Impact

With the implementation of the mitigation measures outlined in relation to noise and vibration, dust, traffic, and visual amenity, Site B will have an imperceptible impact on residential amenity.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects on residential amenity.

5.6.3.3 Strategic Housing Development (Site C)

5.6.3.3.1 Health and Safety

Site C will be constructed in compliance with all current health and safety regulation and specifications. Therefore, upon completion of Site C it's unlikely to have any negative significant impact on human health.

Residual Impacts

No negative impacts.

Significance of Effects

Based on the assessment above there will be no significant effects.

5.6.3.3.2 **Employment and Investment**

Once Site C has been developed and is fully operational, the site will require the hiring of those with specialist skills in regard to upkeep and maintenance of the development, which could result in the transfer of these skills into the local workforce, thereby having a long-term moderate positive impact on the local skills base.

Residual Impact

Long-term moderate positive impact.

Significance of Effects

Based on the assessment above there will be a long-term moderate positive impact on housing, employment and investment opportunities in the local area associated with Site C.

5.6.3.3.3 **Population**

Once the site has been developed and is fully operational, there will be a change to the population of the Study Area, where an increase in housing will cause an influx of new residents into the area. This will allow for changes in population trends, population density, household size and age structure in a manner that has been planned for and provided for in the Meath County Development Plan, Maynooth Environs Local Area Plan and National Planning Framework.

Residual Impact

Slight long-term positive impact.

Significance of Effects

Based on the assessment above there will be a slight long-term positive impact for Population in the local area.

5.6.3.3.4 **Tourism and Amenity**

During the operational phase of Site C there will be no negative impact on tourism. The increase in number of residents within the local or regional area, will have a slight long-term positive impact on tourism.

Residual Impact

Slight long-term positive impact.

Significance of Effects

Based on the assessment above there will be a slight long-term positive impact for tourism in the local area associated with Site C.

5.6.3.3.5 **Land-use**

The site is currently a greenfield site, in use as agricultural land. Site C will result in a change of land-use to an area of housing in the form of a Strategic Housing Development. The total proposed area to be developed measures approximately 19.5 hectares. This change in land use is considered to be a permanent positive impact as the development will reflect the land zoning designations outlined in the Meath County Development Plan (2013-2019) and Maynooth Environs Local Area Plan (2013-2019).

Residual Effect

There will be a slight, long-term positive effect in terms of tourism during the operational phase.

5.6.3.3.6 **Residential Amenity**

Pre-Mitigation Impacts

Potential impacts on residential amenity during the operational phase of Site C could arise primarily due to noise, changes to visual amenity and potential impact of dust and traffic.

Noise

There will be permanent, slight negative impact in terms of noise once Site C has been built, as a result of increased population and increased vehicles making use of Site C. The potential noise impacts that will occur during the operational phase of Site C are further described in Chapter 10: Noise and Vibration, which shows that will be capable of meeting all required guidelines in relation to noise thresholds.

Visual Amenity

The visual impact of Site C is addressed comprehensively in Chapter 11: Landscape and Visual. The location of the Site C has been strategically sited to screen it within localised topography and vegetation which mitigates potential visual effects.

Dust and Air Quality

There will be no impact on human health from dust emissions in the vicinity of Site C once the development has been built and all construction vehicles and personal are offsite.

Any further works which may need to occur on site as part of maintenance and repairs during the operation of the site, may cause slight short-term dust emissions, and is unlikely to have any negative significant impact on human health. The potential dust and air quality impacts that will occur during the operational phase of Site C are further described in Chapter 9 of this EIAR: Air and Climate.

No mitigation will be required on site as the impact of Site C once constructed, is assessed as being imperceptible.

Traffic

As detailed in Chapter 13, Section 13.1, the operational phase of the proposed development will have a long-term moderate positive impact on the receiving traffic and transport network.

Proposed Mitigation Measures

All mitigation as outlined under noise and vibration, dust, traffic, and visual amenity in this EIAR will be implemented in order to reduce, insofar as possible, impacts on residential amenity at properties located in the vicinity of Site C.

Residual Impact

With the implementation of the mitigation measures outlined in relation to noise and vibration, dust, traffic, and visual amenity, Site C will have an imperceptible impact on residential amenity.

Significance of Effects

Based on the assessment above there will be slight negative indirect effects on residential amenity.

5.6.3.4 **Maynooth Outer Orbital Road (MOOR)**

5.6.3.4.1 **Health and Safety**

The MOOR will be constructed in compliance with all current health and safety regulation and specifications. Therefore, upon completion the MOOR is unlikely to have any negative significant impact on human health.

Residual Impacts

No negative impacts.

Significance of Effects

Based on the assessment above there will be no significant effects.

5.6.3.4.2 **Employment and Investment**

Once the MOOR has been developed and is fully operational, the site will require the hiring of those with specialist skills in regard to upkeep and maintenance of the development, which could result in the transfer of these skills into the local workforce, thereby having a long-term moderate positive impact on the local skills base.

Residual Impact

Long-term moderate positive impact.

Significance of Effects

Based on the assessment above there will be a long-term moderate positive impact on transport and employment opportunities in the local area associated with the MOOR.

5.6.3.4.3 **Population**

Once the MOOR has been developed and is fully operational, there will be a change to transport characteristics, amenity and economic impacts to the population of the local area. The MOOR will have a moderate positive impact in terms of the provision of enhanced pedestrian and cycle networks and a moderate positive impact on local journey times and journey reliability due to the upgrade of existing regional and local roads along with connecting the R157 Regional Road to the Moyglare Hall road in Mariavilla.

Residual Impact

Long-term Slight positive impact.

Significance of Effects

Based on the assessment above there will be a long-term Slight positive impact on transport for the local population in the local area associated with the MOOR.

5.6.3.4.4 **Tourism and Amenity**

During the operational phase of the MOOR, there will be no negative impact on tourism. The accessibility to the local or regional area due to the MOOR, will have a slight long-term positive impact on tourism.

Residual Impact

Slight long-term positive impact.

Significance of Effects

Based on the assessment above there will be a slight long-term positive impact for tourism in the local area associated with the MOOR.

5.6.3.4.5 **Residential Amenity**

Pre-Mitigation Impacts

Potential impacts on residential amenity during the operational phase of the MOOR could arise primarily due to noise, changes to visual amenity and potential impact of dust and traffic.

Noise

There will be a moderate increase in noise levels in the vicinity of the MOOR once the development has been built, as a result of increased traffic volumes in the area. The potential noise impacts that will occur during the operational phase of the MOOR are further described in Chapter 10: Noise and Vibration, which shows that will be capable of meeting all required guidelines in relation to noise thresholds.

Visual Amenity

The visual impact of the MOOR is addressed comprehensively in Chapter 11: Landscape and Visual. The location of the MOOR has been strategically sited to screen it within localised topography and vegetation which mitigates potential visual effects.

Dust and Air Quality

There will be a long-term imperceptible impact on human health from dust emissions in the vicinity of the MOOR once the development has been built due to an increased traffic volume in the area.

Any further works which may need to occur on site as part of maintenance and repairs during the operation of the site, may cause slight short-term dust emissions, and is unlikely to have any negative significant impact on human health. The potential dust and air quality impacts that will occur during the operational phase of the MOOR are further described in Chapter 9 of this EIAR: Air and Climate.

No mitigation will be required on site as the impact of the MOOR once constructed, is assessed as being imperceptible.

Traffic

As detailed in Chapter 13, Section 13.1, The operational phase of the proposed development will have a long-term significant positive effect on the receiving traffic and transport network.

Proposed Mitigation Measures

All mitigation as outlined under noise and vibration, dust, traffic, and visual amenity in this EIAR will be implemented in order to reduce, insofar as possible, impacts on residential amenity at properties located in the vicinity of the MOOR.

Residual Impact

With the implementation of the mitigation measures outlined in relation to noise and vibration, dust, traffic, and visual amenity, the MOOR will have an imperceptible impact on residential amenity.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects on residential amenity.

5.6.3.5 Kildare Bridge

5.6.3.5.1 Health and Safety

The Kildare Bridge application will be constructed in compliance with all current health and safety regulation and specifications. Therefore, upon completion the Kildare Bridge works is unlikely to have any negative significant impact on human health.

Residual Impacts

No negative impacts.

Significance of Effects

Based on the assessment above there will be no significant effects.

5.6.3.5.2 Employment and Investment

Once the Kildare Bridge works have been developed and is fully operational, the site will require the hiring of those with specialist skills in regard to upkeep and maintenance of the development and also will facilitate the other components of the Kildare Bridge works, thereby having a long-term slight positive impact on the local potential for employment and investment.

Residual Impact

Long-term slight positive impact.

Significance of Effects

Based on the assessment above there will be a long-term slight positive impact on transport and employment opportunities in the local area associated with the Kildare Bridge works.

5.6.3.5.3 **Population**

Once the site has been developed and is fully operational, there will be a change to transport characteristics and amenity to the population of the local area. The Kildare Bridge works will have a moderate positive impact in terms of local journey times and journey reliability due to the upgrade of existing regional and local roads along with the provision of a standalone pedestrian and cycle bridge.

Residual Impact

Long-term slight positive impact.

Significance of Effects

Based on the assessment above there will be a long-term slight positive impact on transport the local population in the local area associated with the Kildare Bridge works.

5.6.3.5.4 **Tourism and Amenity**

During the operational phase of the Kildare Bridge works, there will be no negative impact on tourism. The accessibility to the local or regional area due to the Kildare Bridge works, will have a slight long-term positive impact on tourism.

Residual Impact

Slight long-term positive impact.

Significance of Effects

Based on the assessment above there will be a slight long-term positive impact for tourism in the local area associated with the Kildare Bridge works.

Residual Effect

There will be a slight, long-term positive effect in terms of tourism during the operational phase.

5.6.3.5.5 **Residential Amenity**

Pre-Mitigation Impacts

Potential impacts on residential amenity during the operational phase of the Kildare Bridge works could arise primarily due to noise, changes to visual amenity and potential impact of dust and traffic.

Noise

There will be a slight increase in noise levels in the vicinity of the Kildare Bridge works once the development has been built, as a result of increased traffic volumes in the area. The potential noise impacts that will occur during the operational phase of the Kildare Bridge works are further described in Chapter 10: Noise and Vibration, which shows that will be capable of meeting all required guidelines in relation to noise thresholds.

Visual Amenity

The visual impact of the Kildare Bridge works is addressed comprehensively in Chapter 11: Landscape and Visual. The location of the Kildare Bridge works has been strategically sited to screen it within localised topography and vegetation which mitigates potential visual effects.

Dust and Air Quality

There will be a long-term imperceptible impact on human health from dust emissions in the vicinity of the Kildare Bridge works once the development has been built due to an increased traffic volume in the area.

Any further works which may need to occur on site as part of maintenance and repairs during the operation of the site, may cause slight short-term dust emissions, and is unlikely to have any negative significant impact on human health. The potential dust and air quality impacts that will occur during the operational phase of the Kildare Bridge works are further described in Chapter 9 of this EIAR: Air and Climate.

No mitigation will be required on site as the impact of the Kildare Bridge works once constructed, is assessed as being imperceptible.

Traffic

As detailed in Chapter 13, Section 13.1, The Kildare Bridge works will have a long-term moderate positive effect in terms of traffic and transport.

Proposed Mitigation Measures

All mitigation as outlined under noise and vibration, dust, traffic, and visual amenity in this EIAR will be implemented in order to reduce, insofar as possible, impacts on residential amenity at properties located in the vicinity of the Kildare Bridge works.

Residual Impact

With the implementation of the mitigation measures outlined in relation to noise and vibration, dust, traffic, and visual amenity, the Kildare Bridge works will have an imperceptible impact on residential amenity.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects on residential amenity.

5.6.3.6 Moyglare Bridge

5.6.3.6.1 Health and Safety

The Moyglare Bridge will be constructed in compliance with all current health and safety regulation and specifications. Therefore, upon completion the Moyglare Bridge is unlikely to have any negative significant impact on human health.

Residual Impacts

No negative impacts.

Significance of Effects

Based on the assessment above there will be no significant effects.

5.6.3.6.2 Employment and Investment

Once the Moyglare Bridge has been developed and is fully operational, the site will require the hiring of those with specialist skills in regard to upkeep and maintenance of the development and also will facilitate the other components of the Moyglare Bridge, thereby having a long-term slight positive impact on the local potential for employment and investment.

Residual Impact

Long-term slight positive impact.

Significance of Effects

Based on the assessment above there will be a long-term slight positive impact on transport and employment opportunities in the local area associated with the Moyglare Bridge.

5.6.3.6.3 Population

Once the site has been developed and is fully operational, there will be a change to transport characteristics, amenity and economic impacts to the population of the local area. The Moyglare Bridge will have a slight positive impact in terms of local journey times and journey reliability due to the upgrade of existing regional and local roads along with connecting the R157 Regional Road to the Moyglare Hall road in Mariavilla.

Residual Impact

Long-term slight positive impact.

Significance of Effects

Based on the assessment above there will be a long-term slight positive impact on transport the local population in the local area associated with the Moyglare Bridge.

5.6.3.6.4 **Tourism and Amenity**

During the operational phase of the Moyglare Bridge, there will be no negative impact on tourism. The accessibility to the local or regional area due to the Moyglare Bridge, will have a slight long-term positive impact on tourism.

Residual Impact

Slight long-term positive impact.

Significance of Effects

Based on the assessment above there will be a slight long-term positive impact for tourism in the local area associated with the Moyglare Bridge.

5.6.3.6.5 **Residential Amenity**

Pre-Mitigation Impacts

Potential impacts on residential amenity during the operational phase of the Moyglare Bridge could arise primarily due to noise, changes to visual amenity and potential impact of dust and traffic.

Noise

There will be a moderate increase in noise levels in the vicinity of the Moyglare Bridge once the development has been built, as a result of increased traffic volumes in the area. The potential noise impacts that will occur during the operational phase of the Moyglare Bridge are further described in Chapter 10: Noise and Vibration, which shows that will be capable of meeting all required guidelines in relation to noise thresholds.

Visual Amenity

The visual impact of the Moyglare Bridge is addressed comprehensively in Chapter 11: Landscape and Visual. The location of the Moyglare Bridge has been strategically sited to screen it within localised topography and vegetation which mitigates potential visual effects.

Dust and Air Quality

There will be a long-term imperceptible impact on human health from dust emissions in the vicinity of the Moyglare Bridge once the development has been built due to an increased traffic volume in the area.

Any further works which may need to occur on site as part of maintenance and repairs during the operation of the site, may cause slight short-term dust emissions, and is unlikely to have any negative significant impact on human health. The potential dust and air quality impacts that will occur during the operational phase of the Moyglare Bridge are further described in Chapter 9 of this EIAR: Air and Climate.

No mitigation will be required on site as the impact of the Moyglare Bridge once constructed, is assessed as being imperceptible.

Traffic

As detailed in Chapter 13, Section 13.1, the proposed development will have a long-term moderate positive impact in terms of traffic and transport.

Proposed Mitigation Measures

All mitigation as outlined under noise and vibration, dust, traffic, and visual amenity in this EIAR will be implemented in order to reduce, insofar as possible, impacts on residential amenity at properties located in the vicinity of the Moyglare Bridge.

Residual Impact

With the implementation of the mitigation measures outlined in relation to noise and vibration, dust, traffic, and visual amenity, the Moyglare Bridge will have an imperceptible impact on residential amenity.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects on residential amenity.

5.6.4 Cumulative Impacts – Interaction of Effects between Various Elements of the Proposed Development

The potential cumulative impacts from interactions between various elements of the Proposed Development have been considered in terms of impacts on Population and Human Health. Due to the proximity, scale and timelines associated with each element, there is potential for cumulative effects with the Proposed Development.

5.6.4.1 Health and Safety

Any potential cumulative impacts between the construction of the Proposed Development in terms of health and safety will be mitigated by the requirement for all projects to adhere to Health & Safety legislation.

5.6.4.2 Dust and Noise

Potential cumulative impacts associated with noise are addressed in Chapter 10 of this EIAR: Noise and Vibration, which conclude that there will be no adverse noise impact on the local population or human health. In regard to dust, mitigation measures addressed in this chapter will ensure there are no significant effects on local population or human health due to the construction of the Proposed Development.

5.6.4.3 Traffic

Potential cumulative impacts associated with traffic are addressed in Section 13.2.5.4 of this EIAR. The proposed development is predicted to have a long-term positive cumulative effect with regard to traffic and transport for Maynooth town and the Maynooth Environs.

5.6.4.4 Employment and Investment

In terms of employment and economic benefit, there will be a significant, long-term, positive, cumulative impact between the elements of the Proposed Development due to the majority of construction workers and materials being sourced locally, thereby helping to sustain employment in the construction trade.

The injection of money in the form of salaries and wages to those employed during the construction and operational phases of the proposed development, has the potential to result in a slight increase in household spending and demand for goods and services in the local area. This would result in local retailers and businesses experiencing a short-term, slight positive impact on their cash flow.

5.6.4.5 Population

The Proposed Development includes for the delivery of new offices in the strategic employment zone, a primary care centre, a nursing home and residential housing together with a Public Park, playground and a network of pedestrian and cycle networks. The Proposed Development will have a significant long-term positive impact on the local population, providing employment, healthcare and housing opportunities to the local and regional population together with a network of pedestrian and cycle infrastructure within the High Amenity lands which traverse the combined development.

5.6.4.6 Tourism and Amenity

As discussed in Section 5.3.2 there are a number of tourist attractions pertaining specifically to the site of the Proposed Development, the closest significant tourist attraction to the Proposed Development is Moygaddy House, which is a protected structure. Moygaddy House is located approximately 200m west the site of the Proposed Healthcare Facility and Strategic Business Park. Further to this, Moygaddy Castle is also located approximately 200m west of the Proposed Development to the south of Moygaddy House. Moygaddy Castle is also a protected structure of cultural heritage and archaeological importance. There will be a slight positive cumulative operational impact on tourism between the proposed site and other projects in the area, where the enhanced network of public open spaces, pedestrian and cycle networks, public park and playground and an increase in workers, residents, and tourists within the area will allow for a slight, positive influence on local tourism.

5.6.5 Cumulative In-Combination Effects

The potential cumulative effects of the Proposed Development in combination with the other projects described in Chapter 2 of this report have been considered in terms of impacts on population & human health.

There are a number of proposed or permitted housing developments within the vicinity of the Proposed Development. A description of the developments is provided in Chapter 2, and where appropriate the application documentation, EIAR and NIS for each development have been reviewed

Further information on the above is provided in Table 2-5 in Section 4.2.1 of Chapter 2.

5.6.5.1 Health and Safety

Any potential cumulative impacts between the construction of the proposed residential development and the other projects in terms of health and safety will be mitigated by the requirement for all projects to adhere to Health & Safety legislation. There will therefore be no cumulative effects in terms of health and safety.

5.6.5.2 Dust and Noise

Potential cumulative effects associated with dust and noise are addressed in Chapters 9 and 10 of this EIAR respectively and conclude that there will be imperceptible effects. Furthermore, it is highly unlikely that all projects listed in Chapter 2 would be constructed at the same time and so the potential for cumulative dust and noise effects during the construction phase is limited. The mitigation measures outlined in Chapter 9 of this EIAR will ensure that cumulative effects on human health in terms of dust and air quality as a result of the proposed development in combination with other projects will be short term, imperceptible, negative.

5.6.5.3 Traffic

Potential cumulative effects associated with traffic are addressed in Section 13.1 of this EIAR. The findings of the assessment indicate that there are a number of large-scale developments that are imminent or have been granted permission that could result in potential cumulative traffic impacts with the proposed development. The cumulative impact of these residential development projects has been accounted for and it will result in a likely, long term, slight negative effect.

5.6.5.4 Employment and Investment

In terms of employment and economic benefit, there will be a significant, short-term, positive, cumulative impact between the proposed residential site and the other projects due to the majority of construction workers and materials being sourced locally, thereby helping to sustain employment in the construction trade.

The injection of money in the form of salaries and wages to those employed during the construction phase of the proposed development and the other projects, has the potential to result in a slight increase in household spending and demand for goods and services in the local area. This would result in local retailers and businesses experiencing a short-term, slight positive impact on their cash flow.

5.6.5.5 Tourism and Amenity

As discussed in Section 5.3.2 there are a number of tourist attractions within the surrounding area of the Proposed Development. There will be a slight positive cumulative operational impact on tourism between the proposed residential site and other projects in the area, where an increase in residents, workers and visitors within the area will allow for a positive influence on local tourism.