

5. POPULATION AND HUMAN HEALTH

5.1 Introduction

This section of the Environmental Impact Assessment Report (EIAR) describes the potential impacts of the proposed development on human beings, population and human health and has been completed in accordance with the guidance referred to in Chapter 1 of this EIAR and, in addition, the 'EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects' (Fáilte Ireland). The full description of the proposed development is provided in Chapter 3 of this EIAR.

The key issues examined in this section of the EIAR include population, human health, employment and economic activity, land-use, tourism, noise and health and safety.

5.2 Statement of Authority

This section of the EIAR has been prepared by Eoin Gilson and reviewed by Michael Watson, both of MKO. Eoin is an experienced Environmental Scientist and has been working in Environmental Consultancy since 2018. Eoin holds a BSc (Hons) in Microbiology and a MSc (Hons) in Applied Environmental Science. Michael has over seventeen years' experience in the environmental sector and had worked for the Geological Survey of Ireland and then a prominent private environmental & hydrogeological consultancy prior to joining MKO in 2014. Michael completed an MA in Environmental Management at NUI, Maynooth in 1999. Michael is a professional geologist (PGeo) and full member of IEMA (MIEMA) as well as a Chartered Environmentalist (CEnv).

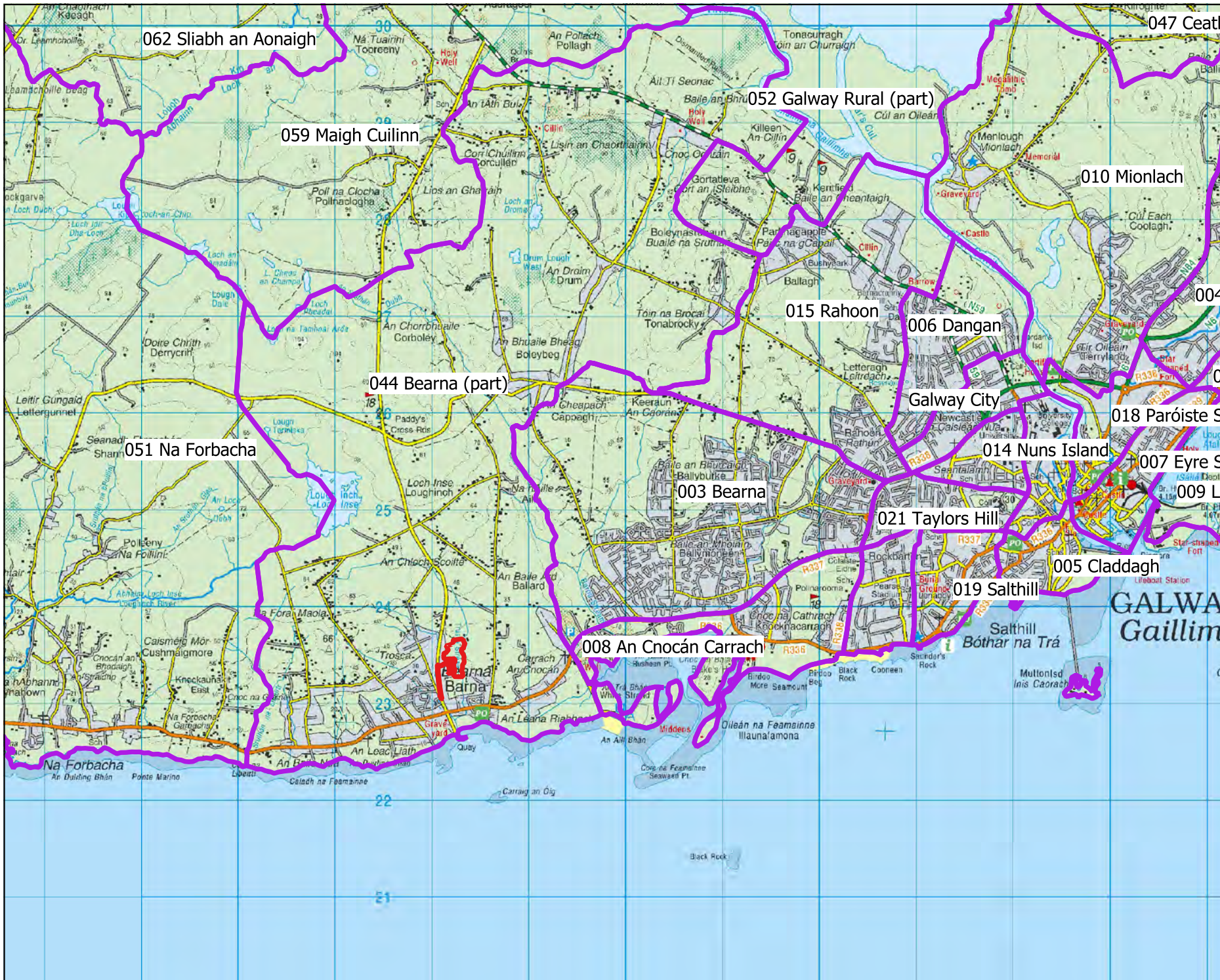
5.3 Methodology

Information regarding human beings and general socio-economic data were sourced from the Central Statistics Office (CSO), the 'Galway County Development Plan 2015– 2021', Fáilte Ireland and any other literature pertinent to the area. The study included an examination of the population and employment characteristics of 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 2000 and 2010 and from the CSO website, www.cso.ie.

Census information is divided into State, Provincial, County, Major Town and District Electoral Division (DED or ED) level but may not be available for all levels. For the purposes of this section of the EIAR, ED level data was used wherever possible. The information at this level was analysed and compared to the same information at national and county level. This method provides an average or standard with which the Human Beings Study Area information can be compared.

In order to make assessments about the population and other statistics in the vicinity of the subject site, the Human Beings Study Area for the Human Beings section of the EIAR was defined in terms of the Electoral Divisions. The proposed residential development lies within the Bearna DED.


The Human Beings Study Area is shown in Figure 5-1. The Human Beings Study Area has a combined population of 3,727 persons and comprises a total land area of 2280 hectares or 22.8 square kilometres (Source: CSO Census of the Population 2016).



Map Legend

- Site Boundary
- Electoral Divisions

Ordnance Survey Ireland Licence No. AR 0021820 © Ordnance Survey Ireland/Government of Ireland



Drawing Title	
Electoral Division Map	
Project Title	
Burkewy Bearna SHD	
Drawn By	Checked By
Drawn EG	Checked MW
Project No.	Drawing No.
190450-a	Fig. 5.1
Scale	Date
1:51229	28.07.2020



MKO
 Planning and
 Environmental
 Consultants
 Tuam Road, Galway
 Ireland, H91 VW84
 +353 (0) 91 735611
 email: info@mkofireland.ie
 Website: www.mkofireland.ie

5.4 Receiving Environment

5.4.1 General Site Description

The site area comprises approximately 5.38ha of land located within the townlands of Trusky East, Trusky West, Freeport and Ahaglugger, approximately 6km to the west of Galway City [I.G. Ref.: M 23388 23615].

The proposed development is fully described in Chapter 3 but will consist of the following:

- 1) Demolition of existing outbuildings
- 2) Construction of 121 no. residential units comprising:
 - 52 no. houses (37 no. three-beds, 15 no. four-beds)
 - 4 no. duplex units in Duplex Block D1 (2 no. two-beds (ground floor units) and 2 no. 3 beds (2 storey units))
 - 8 no. duplex units in Duplex Block D2 (4 no. two-beds (ground floor units) and 4 no. 3 beds (2 storey units))
 - 6 no. duplex units in Duplex Block D3 (3 no. two-beds (ground floor units) and 3 no. 3 beds (2 storey units))
 - 14 no. duplex units in Duplex Block D4 (7 no. two-beds (ground floor units) and 7 no. 3 beds (2 storey units))
 - 4 no. duplex units in Terrace Block T5 (2 no. two-beds (ground floor units) and 2 no. 3 beds (2 storey units))
 - 14 no. Apartments in Apartment Block A1 (5 no. one-beds, 9 no. two-beds)
 - 13 no. Apartments in Apartment Block A2 (4 no. one-beds, 9 no. two-beds and a Multipurpose Room)
 - 2 no. Apartments in Apartment Block A3 (2 no. two-beds)
 - 4 no. Apartments in Apartment Block A4 (4 no. two-beds)
- 3) Development of a crèche facility (224.80 sqm) associated outdoor play areas and parking
- 4) Provision of a footpath connectivity link along the L1321
- 5) Provision of shared communal and private open space, car and bicycle parking, site landscaping and public lighting, decommissioning of the existing wastewater treatment plant and provision of all services, access from the L-1321 via the Cnoc Fraoigh development and all associated site development works
- 6) Provision of a public linear park along the Trusky Stream

5.4.2 Settlement and Land-use

The proposed development involves the construction of a residential development and a linear park along the Trusky Stream at Bearna, Co. Galway

The proposed development site currently consists predominantly of agricultural/greenfield land. Land-use in the wider area includes residential, agricultural and commercial uses. The area immediately to the west of the site consists of an existing residential development, and one off residential houses. The land use bordering the southern, northern, and eastern site boundaries consists of agricultural land.

The area around the site is dominated by agricultural land and low density, suburban developments of detached and semi-detached houses. There are numerous existing houses located within 500m of the proposed development site. Other permitted and proposed developments are also located in the area surrounding the site, and are listed in Chapter 15 of this EIAR. The nearest residential housing is the

Cnoc Fraoigh housing development which provides access to the site and makes up a section of the site’s western boundary.

On the 23rd July 2018, Variation No.2(a) to the Galway County Development Plan 2015-2021 was adopted by Galway County Council, which incorporated the “Bearna Plan” into the GCDP. The site is comprised of lands that are zoned for Residential (Phase 1) Development and ‘OS’ Open Space/Recreation & Amenity zoned lands within the Bearna Plan. All of the lands zoned ‘OS’ within the subject site are also identified as being under Constrained Land Use. There are also two areas within the lands zoned ‘R’ where Objective CCF6 applies. An extract from the zoning map is shown below in Figure 5-4. The Planning Report and Statement of Consistency submitted with the application sets out in detail how the proposed development complies with the Land Use Zoning and considers that the proposed development is acceptable in principle.

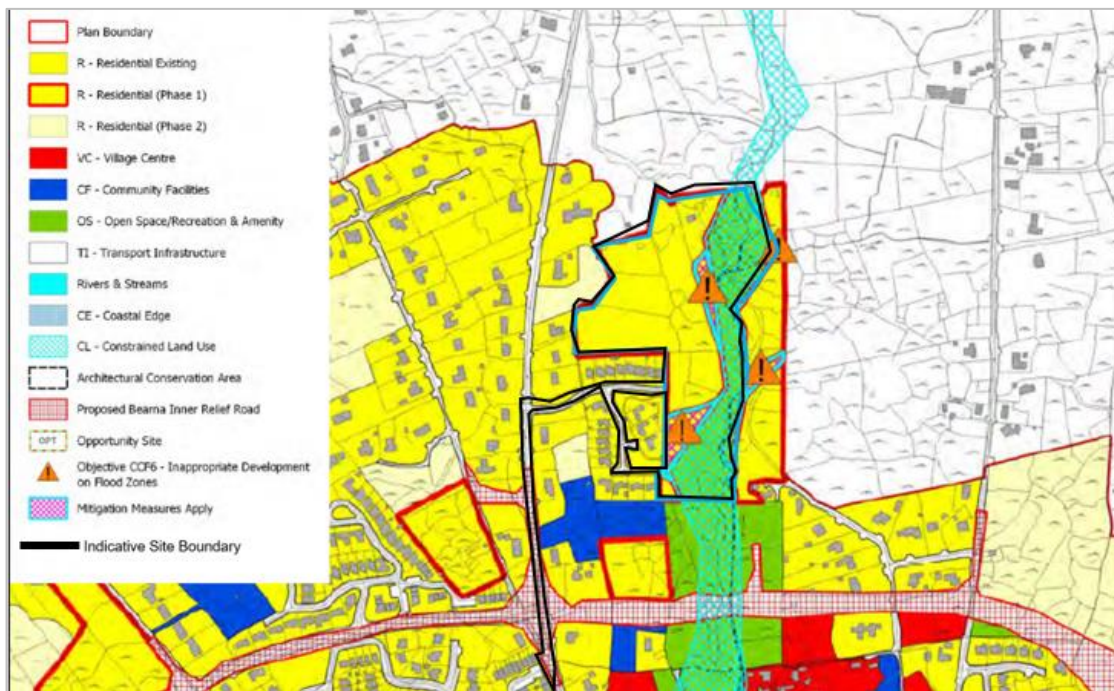


Figure 5-2 Land-use Zoning Map extracted from Variation No.2(a) to the Galway County Development Plan 2015-2021

5.4.3 Population

5.4.3.1 Population Trends

In the four years between the 2011 and the 2016 Census, the population of Ireland increased by 3.8%. During this time, the population of Bearna DED grew by 2.7% to 3,727 persons. Other population statistics for the State and County Galway have been obtained from the Central Statistics Office (CSO) and are presented in Table 5-1.

Table 5-1 Population 2011 – 2016 (Source: CSO)

Area	Population Change		% Population Change
	2011	2016	2011 - 2016
State	4,588,252	4,761,865	3.8%
County Galway	175,124	179,390	3.0%

Area	Population Change		% Population Change
	2011	2016	2011 - 2016
Bearna DED	3,630	3,727	2.7%

The data presented in Table 5-1 shows that the population of Bearna DED increased by 2.7% between 2011 and 2016. This rate of population growth is lower than that recorded at national level from 2011 – 2016. The population for County Galway shows a 3.0% rate of growth for the time between 2011-2016. This is higher than the growth rate for Bearna DED and lower than the growth rate for the Republic of Ireland for the same time.

5.4.3.2 Population Density

The population densities recorded within the State, County Galway and Bearna DED during the 2016 Census are shown in Table 5-2.

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

Area	Population Density (Persons per square kilometre)	
	2011	2016
State	65.57	68.06
County Galway	41.77	43.00
Bearna DED	159.21	163.46

The population density of Bearna DED recorded during the 2016 Census was 163.46 persons per square kilometre. This figure is significantly higher than the national population density of 68.06 persons per square kilometre and the county population density of 43.00 persons per square kilometre.

5.4.3.3 Household Statistics

The number of households and average household size recorded within the Republic of Ireland, Co. Galway and Bearna DED during the 2011 and 2016 Censuses are shown in Table 5-3.

Table 5-3 Number of Household 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 Galway	62,201	2.8	64,234	2.8
Bearna DED	1,169	3.1	1,189	3.1

In general, the figures in Table 5-3 show that while the number of households in the Republic of Ireland, County and DED level has continued to increase, the average number of people per household has remained the same, i.e. there are more households but similar or less people per house.

Average household size recorded within Bearna DED during the 2011 and 2016 Censuses are slightly higher than that observed at national and County level during the same time periods.

5.4.3.4 Age Structure

Table 5-4 presents the percentages for the Republic of Ireland, Co. Galway and Bearna DED population within different age groups as defined by the Central Statistics Office during the 2016 Census.

Table 5-4 Population per Age Category in 2016 (Source: CSO)

Area	Age Category				
	0 - 14	15 - 24	25 - 44	45 - 64	65 +
State	21.1%	12.1%	29.5%	23.8%	13.4%
County Galway	22.7%	10.9%	26.3%	25.6%	14.5%
Bearna DED	23.8%	12.7%	22.6%	29.1%	11.8%

The proportion of the population within each age category at county level is similar to those recorded at national level for most categories. Within Bearna DED there is an expected difference, the highest population percentage occurs within the 45 - 64 age category.

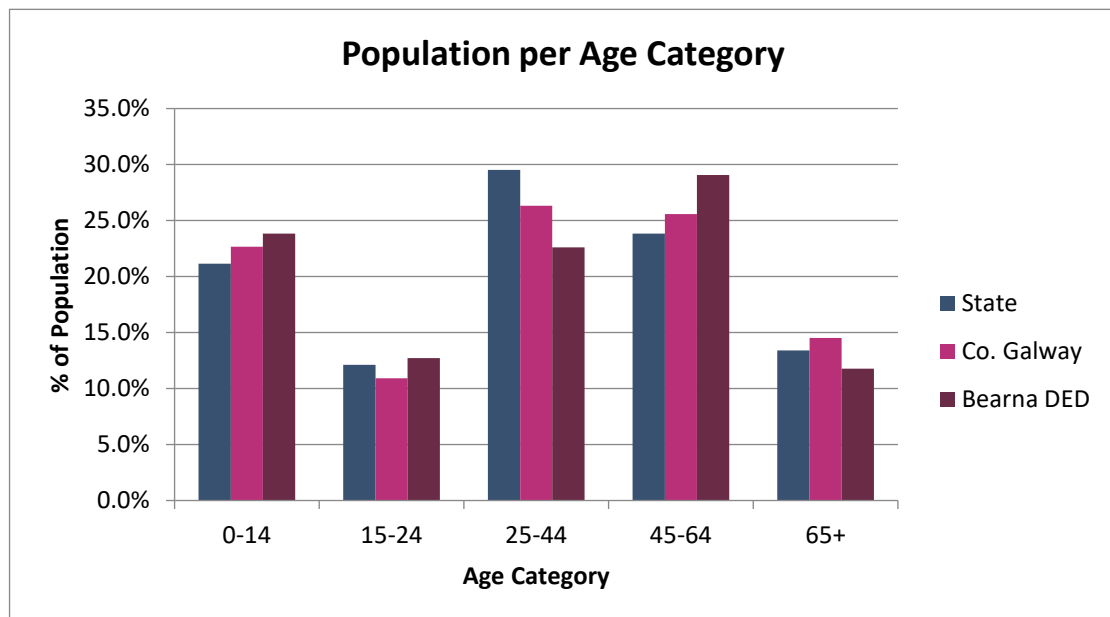


Figure 5-3 Population per Age Category in 2016 (Source: CSO)

5.4.4 Employment and Economic Activity

5.4.4.1 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, e.g. roofers and gardeners; and unskilled, which includes construction labourers, refuse collectors and window cleaners. Figure 5-3 shows the percentages of those employed in each socio-economic group in the Republic of Ireland, Co. Galway and Bearna DED during 2016.

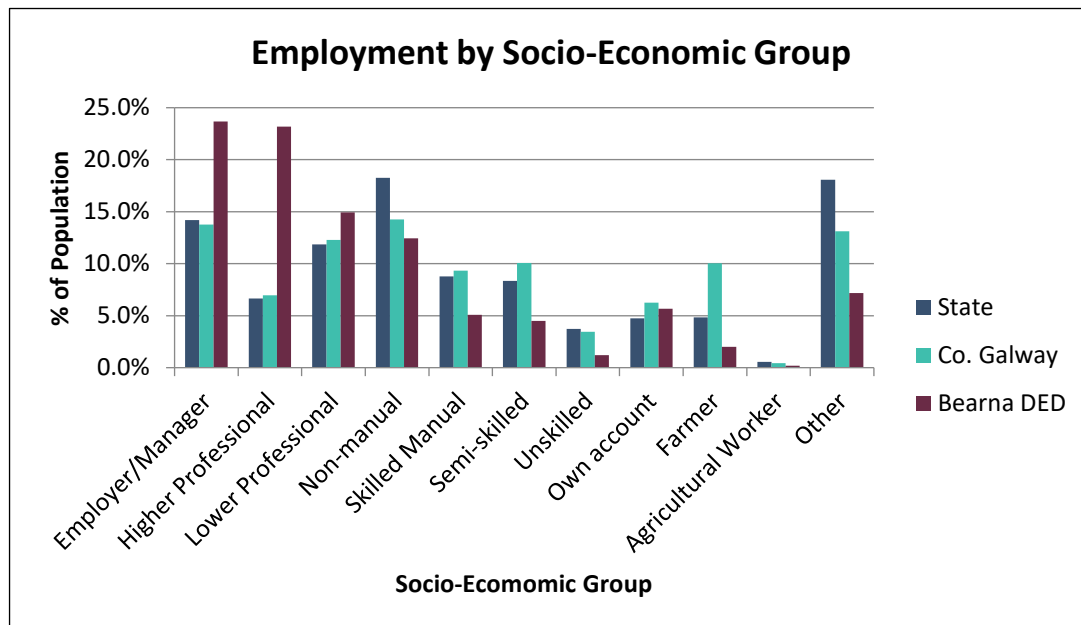


Figure 5-4 Employment by Socio-Economic Group in 2016 (Source: CSO)

The highest level of employment within Bearna DED was recorded in the ‘Employer/Manager’ category. Approximately 23.7% of those employed within Bearna DED form part of this category, in comparison to 13.8% of the County population and 14.2% of the national population. After ‘Employer/Manager’, the next highest levels of employment within the city are in the ‘Higher Professional’ and ‘Lower Professional’ categories. The categories in which the lowest percentage of the Bearna DED population was recorded are Agricultural Worker (0.2% of the Study Area population) and Unskilled (1.2% of Study Area population).

The CSO figures for socio-economic grouping 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 5-3. Furthermore, due to the current Covid 19 crisis, it is likely that there has been a short term increase in unemployment particularly in the semi-skilled and unskilled socio-economic groups.

5.4.5 Tourism

5.4.5.1 Tourist 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 2018, total tourism revenue generated in Ireland was approximately €9.4 billion, an increase on the €8.8 billion revenue recorded in 2017. Overseas tourist visits to Ireland in 2018 grew by 6.5% to 9.6 million (‘Tourism Facts 2018’, Fáilte Ireland, September 2019).

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 2018 (‘Tourism Facts 2018’, Fáilte Ireland, September 2019).

Table 5-5 Overseas Tourists Revenue and Numbers 2018 (Source: Fáilte Ireland)

Region	Total Revenue (€m)	Total Number of Overseas Tourists (000s)
Dublin	€2,095m	6,309
Mid-East/Midlands	€ 393m	1,030
South-East	€261m	1,028
South-West	€987m	2,512
Mid-West	€511 m	1,497
West	€727m	1,963
Border	€244m	752
Total	€5,218 m	15,091

The proposed site is located within the West Region. According to ‘Regional tourism performance in 2018’ (Fáilte Ireland, September 2019) the West Region which comprises Counties Galway, Mayo and Roscommon, benefited from approximately 13.0% of the total number of overseas tourists to the country and approximately 13.9% of the associated tourism income generated in Ireland in 2018.

5.4.5.2 Tourist Attractions

There are no tourist attractions pertaining specifically to the site of the proposed development. Key tourist attractions within the wider area of Galway City include NUI Galway, a number of theatres, Sports facilities (Eamon Deacy Park, The Sportsground, Galway Racecourse, Pierce Stadium, etc.). Bearna golf club is located approximately 3km from the proposed development. The proposed development does not directly impact on any of these sites of existing tourism attractions. The nearby Twelve Hotel, Ardilaun Hotel, Rockbarton House Hotel and other tourist accommodations in the wider area will attract a significant number of tourists to stay. In addition, The Wild Atlantic Way, which passes through the village of Bearna, attracts large numbers of domestic and overseas tourists.

There are a number of large festivals and events held regularly in Galway City which attract a large number of visitors. These include the Galway Races, the Galway International Arts Festival, the Galway Oyster Festival, the Galway Comedy Festival, the Galway Food Festival, the Galway Film Fleadh, The Galway Christmas Market, Cuirte Literary Festival and many others. These festivals attract large crowds, and can result in an increase in traffic volumes on main roads at certain times.

There are no designated focal points or views within the site boundary of the proposed development. However, there are two scenic viewpoints within the study area, located within 1 km from the proposed development. These are Scenic View Number 72- View of sea from north of Bearna and Scenic View Number 74 - View of North Clare Coast. For further information on these views, see Landscape and Visual, Chapter 11 of this EIAR.

The potential for visual impacts arising from the proposed development on the wider landscape and scenic roads is assessed in Chapter 11 of this EIAR.

5.4.6 Local Amenities

5.4.6.1 Education

The primary school located closest to the proposed development site is the Baile Bui National School, located on the R336 which runs through Bearna, approximately 300 metres southeast of the proposed development site. The secondary school located closest to the proposed development site is Coláiste na Coiribe, Knocknacarra, which is approximately 2.2 kilometres northeast of the site.

The National University of Ireland (NUI) Galway main campus is the nearest third level institute to the proposed site and is located approximately 6 kilometres to the east.

5.4.6.2 Access and Public Transport

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

Ceannt train station (Galway City centre) is located approximately 6.5 kilometres east of the site. The station provides train services to Dublin, Limerick and Cork and intervening stations.

There are several bus stops located in Bearna village which is a short walk away from the application site. Bearna is also served three bus routes: Bus Eireann Route No. 424 leaves Bearna arriving at Galway Bus via Salthill and Spanish Parade station in 20 minutes, City Direct Route No. 414 leaves Bearna with journey times of 26 minutes to Eyre Square via the Western Distributor Road, University Hospital Galway and University Road (NUIG) and a private route operated by Lally Coaches also connects Bearna to Queen Street, Galway via Salthill. Bus services from Galway city centre include Galway city (east and north), NUIG, GMIT, Dublin, Dublin Airport, Cork (via Limerick), Ennis (via Co Clare), Donegal (via Sligo) and intervening stops.

Within the proposed development site, pedestrian and cycle infrastructure will be provided, 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.

5.4.6.3 Amenities and Community Facilities

Most of the amenities and community facilities, including GAA and other sports clubs, youth clubs and recreational areas, are available in the areas surrounding the site (i.e. Bearna, Knocknacarra and Furbo), as well as in the wider Galway area. The main church located closest to the proposed development site is 1 kilometre to the east along the R336.

There are a wide range of services available in the area. Retail and personal services are found throughout Baran village and in Galway City. Galway City Council has a branch library in Westside, approximately 5 kilometres east of the proposed site.

5.5 Human Health

The consideration of potential impacts on human health are examined in detail 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 Section 5.7 below. Potential issues relating to health and safety, and amenity concerns are also discussed below.

5.6 Social and Economic Assessment

5.6.1 Market Demand for the Proposed Development

The Government's Action Plan for Housing and Homelessness, Rebuilding Ireland, July 2016 (the Action Plan), acknowledges that since the economic collapse in 2008, very low levels of housing have been constructed, especially in the main cities and urban areas where they have continued to be needed. The overarching aim of the Action Plan is to ramp up delivery of housing from its current under-supply across all tenures to help individuals and families meet their housing needs. The Plan sets ambitious targets to double the annual level of residential construction to 25,000 homes and deliver 47,000 units of social housing in the period to 2021, while at the same time making the best use of the existing housing stock and laying the foundations for a more vibrant and responsive private rented sector.

Furthermore, The Regional Spatial & Economic Strategy for the Northern & Western Regional Assembly (RSES NWRA) was adopted on 24th January 2020. The principal purpose of the (RSES) is to support the implementation of the National Planning Framework (NPF) and the economic policies and objectives of the Government by providing a long-term strategic planning and economic framework for the development of the regions. Section 3.6 of the RSES sets out the Galway Metropolitan Area Strategic Plan (MASP). The Vision of this MASP is that Galway will be a leading global city, renowned as a successful, sustainable, competitive, compact and accessible city of scale that supports a high quality of life, maintains its distinctive identity and supports its rich heritage, language and cultural experience.

The RSES outlines arrangements for a co-ordinated metropolitan area strategic plan (MASP) for the Galway Metropolitan Area. The MASP has been provided with statutory underpinning to act as 12-year strategic planning and investment framework. The MASP is an opportunity for Galway to address recent growth legacy issues and build on key strengths, including a vibrant arts and cultural scene, year-round tourism and an attractive natural setting.

As outlined in the MASP, in Section 3.6 of the RSES, the Galway Metropolitan Area has considerable land capacity that can significantly contribute to meeting the housing demands based on population targets set out in the NPF and RSES. The targets are as follows (per section 3.6.3.1 of the RSES):

- 1) Population of Galway MASP to grow by 27,500 to 2026 and by a further 14,500 to 2031 with the population of the City and Suburbs accommodating 23,000 to 2026 and a further 12,000 to 2031.
- 2) Deliver at least half (50%) of all new homes that are targeted within the MASP to be within the existing built-up footprint.

5.7 Likely and Significant Impacts and Associated Mitigation Measures

5.7.1 Do-Nothing Effects

If the proposed development were not to proceed, there would be no change to the existing environment. The potential for additional investment and employment in the area in relation to the construction and operation of the proposed site would be lost. It is considered that the 'Do Nothing' impact would be permanent, negative and slight as the proposed development site is zoned as Residential Development and Open Space/Recreation & Amenity lands and the proposed development would contribute to the much-needed housing stock for Co. Galway and provide a public park along the Trusky Stream.

5.7.2 Construction Phase

5.7.2.1 Health and Safety

During the construction phase, the operation of machinery, increased construction traffic and risk to health from onsite spillages, dust and noise; pose a potential health and safety risk to the employees of the proposed development.

The presence and operation of heavy machinery and traffic entering and leaving the subject 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.

Mitigation

- A site-specific Health and Safety Plan will be in place for the proposed facility. In the event that Covid-19 restrictions are in place at the commencement of the construction phase, the Health and Safety Plan will include provisions regarding compliance with relevant Covid-19 restrictions. All site staff will be made aware of and adhere to the Health and Safety Plan.
- Operate a Site Induction Process for all site staff,
- Ensure all site staff will have current 'Safe Pass' cards,

- Only appropriately qualified and trained personnel will be permitted to operate machinery onsite.
- Appropriate barriers and signage will be used.
- The proposed development site will not be accessible to members of the public.
- The site will also be secure to prevent the risk of trespass through signage and provision of barriers.

Residual Effects

With the implementation of the above mitigation measures, there will be a Short-term, slight Negative Impact in terms of Health and Safety during the construction phase.

5.7.2.2 Employment and Investment

There will be an improvement in employment in the area of the proposed development, as it is anticipated that there will be an increase in job opportunities for those working within the construction sector, building services and supplies, as well as in local businesses. Those to be employed at the proposed site will be from the local area so any increased revenue from this employment returns directly to the local community.

Residual Effect

The proposed development will result in a Short-term, slight positive impact on employment and investment during the construction phase

5.7.2.3 Population

During the construction phase of the proposed development, 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 or regional area.

Residual Effect

The proposed development will result in no negative impact on population during the construction phase

5.7.2.4 Tourism

During the construction phase of the proposed development, there will be no direct negative impacts on tourism, as there are no tourist attractions on, or immediately adjacent to, the subject site. There is potential for short term, slight negative effects on local tourism as a result of increased traffic associated with the construction phase of the proposed development, however, given the relatively small scale of the development these impacts are not likely to be significant. Traffic impacts associated with the proposed development are discussed in detail in Chapter 13 of this EIAR.

Mitigation

The following construction stage mitigation measure relating to traffic shall apply:

- All construction activities will be managed and directed by a Traffic Management Plan (TMP). The details of the TMP will be agreed with the roads department of the Local Authority in advance of construction activities commencing on-site.

Residual Effect

With the implementation of the above mitigation measures, there will be a short term, imperceptible, and of neutral effect in terms of Tourism during the construction phase

5.7.2.5 Land-use

The construction phase involves a change in land use of the site from a previous agricultural site, to use as a temporary construction site. The proposed development will result in a permanent change in land-use to one of residential and amenity use. This is considered to be a permanent positive impact on an area of land that is zoned for this specific use.

Residual Effect

The proposed development will result in No negative impact on landuse.

5.7.2.6 Economic Activity

During the construction phase of the proposed residential development, increased employment is likely to result in an improvement in economic activity in the local area of the proposed development site, particularly within the construction sector, building services and supplies, as well as in local businesses. The increase in employment of construction workers within the local or regional area, will have a medium to long term, positive impact on the economy.

Residual Effect

The proposed development will result in no negative impact in terms of Economic Activity during the construction phase.

5.7.2.7 Noise

There will be an increase in noise levels in the vicinity of the proposed development site during the construction phase, as a result of heavy vehicles and building operations. The potential noise impacts that will occur during the construction phase of the proposed development are further considered in Section 10 of this EIAR.

Mitigation

Noise emissions arising from construction phase operations at the proposed development site will not exceed the identified 65 dB LAeq 1 h criterion recommended by BS 5228-1:2009+A1:2014, and the 70 dB criterion recommended by the National Roads Authority (now Transport Infrastructure Ireland). At most offsite receptors, LAeq 1 h levels will be lower than 55 dB. The highest level will be received at the dwelling outside the southeast corner, where the received LAeq 1 h level during worst case scenario operations will reach 63 dB.

Best practice measures for noise control are included in the CEMP and will be adhered to onsite during the construction phase of the proposed development in order to mitigate the slight negative impact associated with this phase of the development. The measures include:

- Construction operations will in general be confined to the period Monday-Friday 0800-1900 h, and Saturday 0800-1600 h.
- Where it is proposed to operate plant during the period 0700-0800 h, 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 outside the site entrance will be prohibited.
- A site representative will be appointed as a liaison officer with the local community. Prior to commencement of construction, contact details for the officer will be circulated to all local residents. The officer will notify local residents of upcoming works phases and likely noise sources.
- 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.
- Guidance set out in BS 5228-1:2009+A1:2014 with respect to noise control will be applied throughout the construction phase.

Residual Effect

With the implementation of the above mitigation measures, there will be a short-term, slight negative Impact on population and human health in terms of Noise during the construction phase.

5.7.2.8 Dust and Air Quality

Potential dust and vehicle emission sources during the construction phase of the proposed development include the use of machinery and plant and on-site vehicular traffic. The entry and exit of vehicles from the site may result in the transfer of dust to the public road, particularly if the weather is wet. This may cause nuisance to residents and other road users, thereby creating a short-term slight negative impact.

The potential impacts that will occur during the construction phase of the proposed development are further considered in Section 9 of this EIAR. Dust emissions resulting from the construction of the proposed development, if uncontrolled have the potential to have a short term, slight, negative impact on human health.

Mitigation

The following measures are included in the CEMP and 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.
- If dust levels become an issue, then all dust generating activities on site will cease until such time as weather conditions improve (e.g. wind levels drop or rain falls) or mitigation measures such as damping down of the ground are completed.
- 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 the site boundary where residential properties exist.
- Site road ways 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.
- Deploy Road Sweeper as required on External Roads.

Residual Effect

With the implementation of the above mitigation measures, there will be a Short-term, Imperceptible Negative effect in terms of dust and air quality, and a short term, imperceptible, negative effect in terms of human health during the construction phase.

5.7.2.9 Traffic

All deliveries and vehicles into site will access the site from the new site entrance which will be located on the western side of the site boundary via the existing Cnoc Fraoigh residential development.

The location of the vehicular entrance and access will be regularly reviewed during the construction to ensure that the pedestrian and vehicular access points are located and maintained appropriately.

The increase in traffic volumes as a result of construction vehicles visiting the site is not considered to be excessive and will be spread out over the duration of the construction phase of the development. Due to the designated access point off the L-1321 via the Cnoc Fraoigh development, allowing delivery vehicles to pull off the road into the site, there will be no significant disruption on the traffic flows on the the L-1321 as a result of the construction of the development. It is recommended that all deliveries are provided with instructions / directions on accessing the site from the L-1321 and surrounding local road network. The potential impacts for traffic and transportation are discussed in detail in Section 13 of this EIAR.

Residual Effect

The proposed development will have a Short-term, Slight Negative Impact in terms of traffic during the construction phase.

5.7.2.10 Human Health

Dust emissions resulting from the construction of the proposed development, if uncontrolled have the potential to have a short term, slight, negative impact on human health. Likewise, there will be an increase in noise levels in the vicinity of the proposed development site during the construction phase, as a result of heavy vehicles and building operations. In the absence of mitigation, there is potential for short term, slight, negative impacts on human health as a result of noise.

Mitigation

The mitigation measures discussed above in Sections 5.7.2.7 and 5.7.2.8 will be implemented to minimise potential impacts on Human Health during the construction phase

Residual Effect

With the implementation of the above mitigation measures, there will be a Short-term, Imperceptible Negative effect in terms of human health during the construction phase.

5.7.3 Operational Phase

5.7.3.1 Health and Safety

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

Residual Effect

No negative impact

5.7.3.2 Employment and Investment

Once the site 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 Effect

No negative impact

5.7.3.3 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 Galway County Development Plan, RSES and NPF.

Residual Effect

No negative impact

5.7.3.4 Tourism

During the operational phase of the proposed development, 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.

Potential landscape and visual effects of the proposed development are analysed in detail in Chapter 11 of this EIAR. The magnitude of change in the landscape arising as a result of the proposed development is considered to be Moderate in localised areas around the site. The magnitude of change in the landscape of the wider study area (LVIA study area to 1 km) as a whole is deemed to be Negligible.

Overall, the predicted likely effects on landscape attributed to the proposed development are considered to be **Low**. Any landscape effects likely to arise will be localised and the nature of the development is in keeping with the surrounding urban landscape. The overall likely visual effects attributed to the proposed development will be **Low-Medium**. Based on this analysis there will be no significant effect on tourism due to visual or landscape impacts resulting from the construction of the proposed development.

There were 2 no scenic viewpoints were identified in the LVIA study area. Due to the location of the proposed development site, and the presence of screening, there will be no landscape and visual effects upon the scenic amenity of Views 72 and 74 arising from the proposed development. In light of Fáilte Ireland's *EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects*, and based on the limited visibility of the proposed development from scenic viewpoints, the proposed development will not adversely impact the perception of pace of life or safety in the local area.

Residual Effect

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

5.7.3.5 Land-use

The site is currently a greenfield site, used as agricultural land. The proposed residential development and the linear park proposed along the Trusky Stream will result in a permanent change in land-use to residential use and amenity use. The change in the land-use of the site would be significant in the context of the local and wider area, with resultant permanent moderate positive impact on land-use.

Residual Effect

There will be a permanent, moderate, positive impact in terms of Land-Use during the operational phase.

5.7.3.1 Amenity

The provision of a public linear park along the Trusky Stream will have a positive impact in terms of amenities available to the general population. The proposed park will be public and will not be limited

to residents of the proposed housing development. In addition. The linear park is designed to facilitate the Local Area plan's proposed greenway which will, when complete, facilitate additional permeability through the scheme and direct access to the town centre.

Residual Effect

There will be a moderate, permanent, positive effect on amenity during the operation phase

5.7.3.2 Noise

There will be an imperceptible increase in noise levels in the vicinity of the proposed development site once the development has been built, as a result of increased population and increased vehicles making use of the development. The potential noise impacts that will occur during the operational phase of the proposed development are further described in Section 10 of this EIAR.

Residual Effect

There will be a permanent, imperceptible, neutral impact in terms on noise during the operational phase.

5.7.3.3 Dust and Air Quality

There will be no impact on human health from dust emissions in the vicinity of the proposed development site 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 the proposed development are further described in Chapter 9 of this EIAR.

Mitigation

No mitigation will be required on site as the impact is assessed as being imperceptible and will not be noticed within the area which already contains many residential developments.

Residual Effect

There will be a permanent, imperceptible, neutral impact in terms of Dust and Air Quality, and Human Health, during the operational phase.

5.7.3.4 Traffic

During the operation phase of the proposed residential development, access to the proposed development is to be facilitated via the existing road infrastructure.

TRICS data for similar sized residential developments were obtained in order to inform the trip rate associated with such a development. It is anticipated that a total of 65 trip movements in the AM peak and a total of 56 trip movements in the PM peak will result from the proposed development..

The traffic impact assessment, as summarised in Section 13 of the EIAR and presented in Appendix 13-1, indicates that in terms of base year traffic, all key junctions assessed operate well within capacity. The assessment of all future scenarios also demonstrates that with the introduction of traffic generation

associated with the proposed development on the adjacent local road network, all junctions are expected to operate within capacity with no adverse impacts in terms of traffic queuing, delay or capacity. The overall impacts of the project on traffic are likely to be long term, not significant, and negative in effect.

Further details on the traffic and transportation impact assessment are presented in Section 13 of this EIAR

Mitigation

The proposed development is consistent with all national, regional and local policies. In particular those policies and objectives aligned with active and sustainable travel and transportation. The following transportation characteristics are integrated into the development proposal to assist in mitigating the impacts:

- The proposed development incorporates extensive site permeability with high quality footpaths and streets appropriate for mixed traffic cycling, with high quality cycle parking and car parking all in line with the County Development Plan and national standards and best practice.
- The development incorporates upgrades to the local road network, namely the L1321 creating a high quality direct pedestrian and cyclist link towards the town centre of Bearna and ensuring integration with existing walking, cycling, public transport provisions and local amenities.
- Demand Management is also underpinned by the co-location of residential, childcare and leisure and amenity facilities.
- The propensity for car ownership and car use is managed through measures that include reduced residential parking provision and increased cycle parking provision in line with the County Development Plan and national standards and best practice

The development contains the required infrastructure to provide electric charging to all car parking spaces.

Residual Effect

With the implementation of the above mitigation measures, there will be a long-term, not significant, negative effect in terms of traffic during the operational phase.

5.7.3.5 Vulnerability of the Project to Natural Disaster

A residential development is not a recognised source of pollution. Should a major accident or natural disaster occur the potential sources of pollution onsite during the operational phase is limited. Sources of pollution at the proposed development with the potential to cause significant environmental pollution and associated negative effects on health such storage of wastes etc. are limited.

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 Section 8 of this EIAR. All buildings are located in Indicative Flood Zone C ... 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.

Mitigation

The risk of pluvial and or fluvial flooding is minimised by the incorporation of a properly designed surface drainage and gravity sewer network, and by using underground attenuation tanks for drainage management which will control discharge to the Trusky Stream at pre-development greenfield rates.

Residual Effect

With the implementation of the above mitigation measures, there will be an Unlikely Imperceptible Temporary Negative Impact in terms of vulnerability to natural disasters during the operational phase.

5.7.4 Cumulative effects resulting from Interactions between various elements of the proposed development

The interaction of the various elements of the proposed development was considered and assessed in this EIAR with regards population and human health. The potential for each individual element of the proposed development on its own to result in significant effects on human beings was considered in the impact assessment. The entire project including the interactions between all its elements was also considered and assessed for its potential to result in significant effects on population and human health in the impact assessment presented.

All interactions between the various elements of the project were considered and assessed both individually and cumulatively within this chapter. Where necessary, mitigation was employed to ensure that no cumulative effects will arise as a result of the interaction of the various elements of the development with one another.

5.7.5 Cumulative In-Combination Effects

The potential cumulative effects of the proposed development in combination with the other projects described in Chapter 15 of this report have been considered in terms of impacts on Population and Human Health.

Of the projects listed in Chapter 15 of this EIAR it was determined that, due to proximity and scale, the seven projects listed in Table 5.6 below have to potential for cumulative effects on Population and Human Health in combination with the proposed development. There are 5 no. proposed housing developments with permission granted in the locality, 1 housing development at pre-planning and the proposed Galway City Ring road in the locality. Where appropriate the application documentation, EIAR and NIS have been reviewed to inform the assessment.

Table 5-6 Local/ Nearby Developments

	Description	Decision
Pre-planning	Bearna Village SHD – Prospective SHD development of approximately 105 units	
ABP-302848-18	approval in relation to a proposed road development consisting of :- A dual carriageway, consisting of 2 lanes and a hard shoulder in each direction divided by a segregating barrier, A single carriageway, consisting of 1 lane and a hard shoulder in each direction, New link roads, The realignment / improvement of regional, county and local roads crossed by the proposed road development.	
19/1749	for minor amendments to previously granted planning permissions ref. 17/1314 and 18/1527 for 48 units at An Maolán.	Grant
19/314	for the construction of 20 no. residential units (4 no. 3 bed semi-detached dwellings & 16 no. 5 bed detached dwellings) including the construction of a new road accessed via the existing Dreasla housing development, infrastructure, ESB Substation and all associated external works.	Grant
16/147	for development on site accessed from the main street (R336). The proposed development will consist of the following: (1) modifications and improvements to 2 no. existing 2 storey street front houses, new public footpath and access to the houses, on-street car-parking spaces and boundary treatments. Construction of 1 no. new infill 1 bed roomed terraced house between the existing street front houses (2) demolition of existing partially-built garage structure on the site (3) construction of 15 no. new houses	Grant
18/148	for the construction of 9 no. residential units with 1165.6 sqm Gross floor space.	Grant
17/1305	for the construction of three no. two storey houses (comprising 2 no. 3 bedroom & 1 no. 5 bedroom) including infrastructural sewer connection, vehicular access on waterfront & parking and associated site works.	Grant

5.7.5.1 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.

5.7.5.2 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 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.

5.7.5.3 Traffic

Potential cumulative effects associated with traffic are addressed in Section 13.12 of this EIAR. The findings of the assessment indicate that there are a number of small 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, not significant negative effect.

The proposed N6 Galway City Ring Road is located approximately 0.7 km north of the proposed development. In terms of the proposed strategic housing development subject of this EIAR, the proposed GCRR will have a positive impact by providing an alternative safe and efficient route into the city and by improving the environment within Bearna Village and facilitating the potential for future improvements to the public realm, walking and cycling environment.

The proposed strategic housing development will not have any negative impacts on the GCRR as the GCRR is design with the objective to facilitate population growth of compact and sustainable development, such as the proposed strategic housing development.

5.7.5.4 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 residential site 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.

5.7.5.5 Land-use

The surrounding land-uses of residential and agricultural will continue during the operation phase of the proposed residential site.

The impact of the proposed development site is negligible as the site will have a positive impact on the surrounding area. As there will be a negligible impact the potential for cumulative impacts are negligible.

5.7.5.6 Tourism and Amenity

As discussed in Section 5.4.6.2 there are no tourist attractions pertaining specifically to the site of the proposed development, however there are numerous attractions located in the Bearna area and the wider area of Galway City.

There will be a slight positive cumulative operational impact on tourism between the proposed site and other projects in the area, where an increase in workers, residents, and tourists within the area will allow for a slight, positive influence on local tourism.