

4. POPULATION AND HUMAN HEALTH

4.1 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 set out by the Environmental Protection Agency (EPA) in ‘in particular the Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports’ (EPA, August 2017). The full description of the proposed development is provided in Chapter 3 of this EIAR.

One of the principle concerns in the development process is that people, as individuals or communities, should experience no diminution in their quality of life from the direct or indirect impacts arising from the construction and operation of a development. Ultimately, all the impacts of a development impinge on human beings, directly and indirectly, positively and negatively. 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.

4.2 Statement of Authority

This section of the EIAR has been prepared by Thomas Blackwell and reviewed by Michael Watson, both of MKO. Thomas has over 15 years of progressive experience in environmental consulting in Ireland and the USA. Thomas holds a BA (Hons) in Geography from Trinity College Dublin and a M.Sc. in Environmental Resource Management from University College Dublin. 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).

4.3 Methodology

Information regarding human beings and general socio-economic data were sourced from the Central Statistics Office (CSO), the ‘Galway City Development Plan 2017– 2023’, 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, Galway City 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 inferences 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 Galway City. Galway City was selected to represent the Human Beings Study Area for the proposed development, as although the site is situated in the western extent of the city, it will have an impact on the entire population of Galway City.

The Human Beings Study Area is shown in Figure 4.1. The Human Beings Study Area which is the area of Galway City, has a combined population of 78,668 persons and comprises a total land area of 4915 hectares or 49.15 square kilometres (Source: CSO Census of the Population 2016).

For reference, the proposed development site lies within Bearna DED, as shown in Figure 4.1.

4.4 Receiving Environment

4.4.1 General Site Description

The site of the subject development is located in the the townland of Ragoon to the west of Galway City. The site is approximately 2.7 kilometres west of Galway City centre and approximately 2.0 kilometres to the northwest of Salthill. The landcover of the proposed site consists of scrub land in the northern portion of the site and a construction compound in the southern portion of the site. There is a small area of landscaping adjacent to the access road that bisects the site. Access to the site will be gained from the existing roundabout constructed on the Western Distributor Road.

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

1. *Construction of 332 no. residential units:*
 - *93 no. 1 bed apartments*
 - *219 no. 2 bed apartments*
 - *20 no. 3 bed apartments*
2. *Provision of 2,667 sq.m of commercial floorspace.*
3. *Provision of 93 sq.m of community use facilities*
4. *Provision of 470 sq.m of tenant amenity accommodation including shared workspaces, shared dining and lounge facilities*
5. *Provision of 174sq.m creche facility including an external secure play area.*
6. *Provision of 85 no. car parking spaces and provision of realigned road between Gort na Bró and Gateway Retail Park Road.*
7. *Change of use of underground void to 181 bay underground car park*
8. *Provision of shared communal and private open space, car parking, bicycle parking, bin storage, public lighting, site landscaping, services, signage, substation and all associated site development works.*

There are numerous existing housing developments (ranging from single houses to multiple) located within 500m of the proposed development site. Other permitted and proposed housing development are also located in the area surrounding the site, with the most significant described in Section 2.5.2 of this EIAR. The closest existing occupied dwelling is located approximately 25m from the eastern site boundary.

The primary land-use in the area surrounding the site comprises low density residential and commercial land-use, with institutional also featuring. The site of the proposed development is currently not used for any agricultural activities.

4.4.2 Settlement and Land-use

The proposed site is located within the mixed use Knocknacarra District Centre. The area immediately to the west of the site consists of commercial development, with a primary school located to the north of the site. The land use bordering the southern and eastern site boundaries is residential.

The area around the site is dominated by low density, suburban developments of detached and semi-detached houses. There are several hundred houses located within 500 metres of the proposed site with the closest occupied dwelling located approximately 25 metres to the east of the site.

4.4.3 Population

4.4.3.1 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 Galway City grew by 4.2% to 78,668 persons. Other population statistics for the State, County Galway and the Study Area have been obtained from the Central Statistics Office (CSO) and are presented in

Table 4-1.

Table 4-1 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	2.4%
Galway City (Study Area)	75,529	78,668	4.2%

The data presented in Table 4.1 shows that the population of Galway City increased by 4.2% between 2011 and 2016. This rate of population growth is higher than that recorded at both County and national level from 2011 – 2016. The population for County Galway shows a 2.4% rate of growth for the time between 2011-2016. This is lower than the growth rates for both Galway City and the Republic of Ireland for the same time.

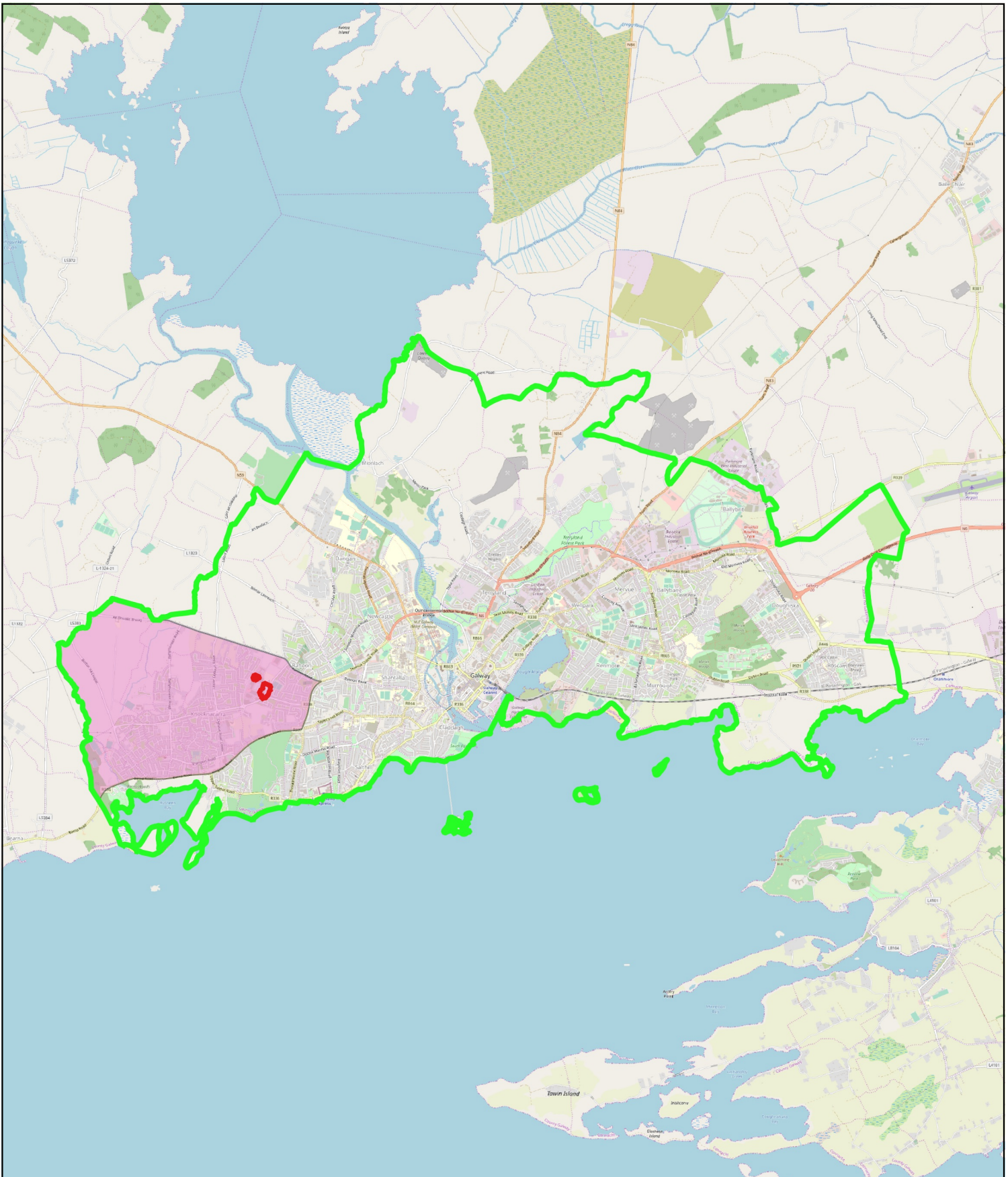
4.4.3.2 Population Density

The population densities recorded within the State, County Galway and Galway City during the 2016 Census are shown in **Error! Reference source not found.**

Table 4-2 Population Density in 2016 (Source: CSO)

Area	Population Density (Persons per square kilometre)	
	2011	2016
State	67.5	70
County Galway	41.77	43.00
Galway City (Study Area)	1536.7	1600.6

The population density of Galway City recorded during the 2016 Census was 1600.6 persons per square kilometre. This figure is significantly higher than the national population density of 69.6 persons per square kilometre and the county population density of 29.9 persons per square kilometre.




Map Legend


- Site Boundary
- Population Study Area - Galway City

Electoral Divisions

- Bearna



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Drawing Title	
Population Study Area	
<small>Project Title</small> SHD at Knocknacarra District Centre	
<small>Drawn By</small> TJB	<small>Checked By</small> MH
<small>Project No.</small> 180531-a	<small>Drawing No.</small> Figure 4.1
<small>Scale</small> 1:75000	<small>Date</small> 23.10.2019
	
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4.4.3.3 Household Statistics

The number of households and average household size recorded within the Republic of Ireland, Co. Galway and Galway City during the 2011 and 2016 Censuses are shown in Table 4.3.

Table 4-3 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	2.7	1,702,289	2.7
County Galway	60,952	2.8	63,040	2.8
Galway City	27,726	2.6	28,859	2.6

In general, the figures in Table 4.3 show that while the number of households in the Republic of Ireland, County and City level has continued to increase, the average number of people per household has remained the same, i.e. there are more households but a similar number of people per house. Average household size recorded within Galway City during the 2011 and 2016 Censuses are in line with that observed at national and County level during the same time periods.

4.4.3.4 Age Structure

Table 4.4 presents the percentages for the Republic of Ireland, Co. Galway and Galway City population within different age groups as defined by the Central Statistics Office during the 2016 Census. This data is also displayed in Figure 4.1.

Table 4-4 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%
Galway City	16.8%	17.1%	35.0%	19.8%	11.2%

The proportion of the population within each age category at county level is similar to those recorded at national level for most categories. Within Galway City there is an expected difference, the highest population percentage occurs within the 25 - 44 age category.

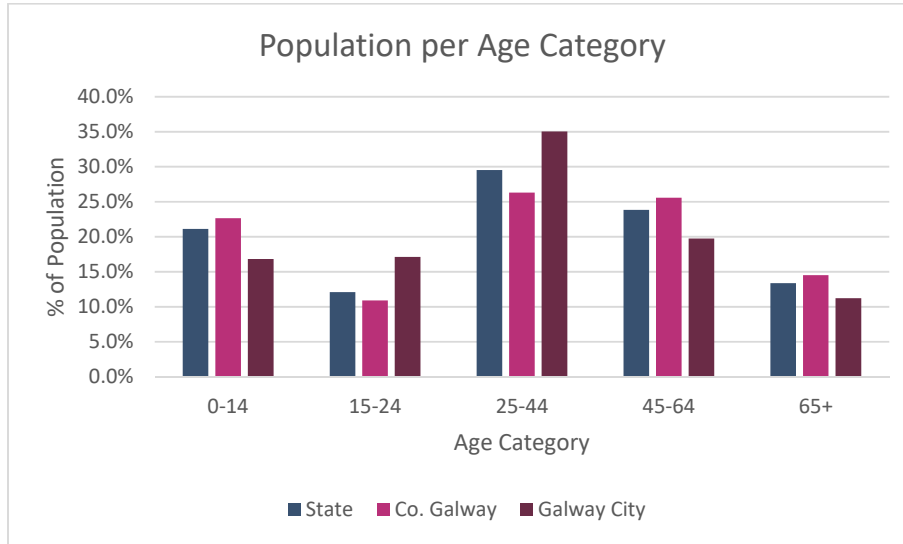


Figure 4-2 Population per Age Category in 2016 (Source: CSO)

4.4.4 Employment and Economic Activity

4.4.4.1 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 4.3 shows the percentages of those employed in each socio-economic group in the Republic of Ireland, Co. Galway and Galway City during 2016.

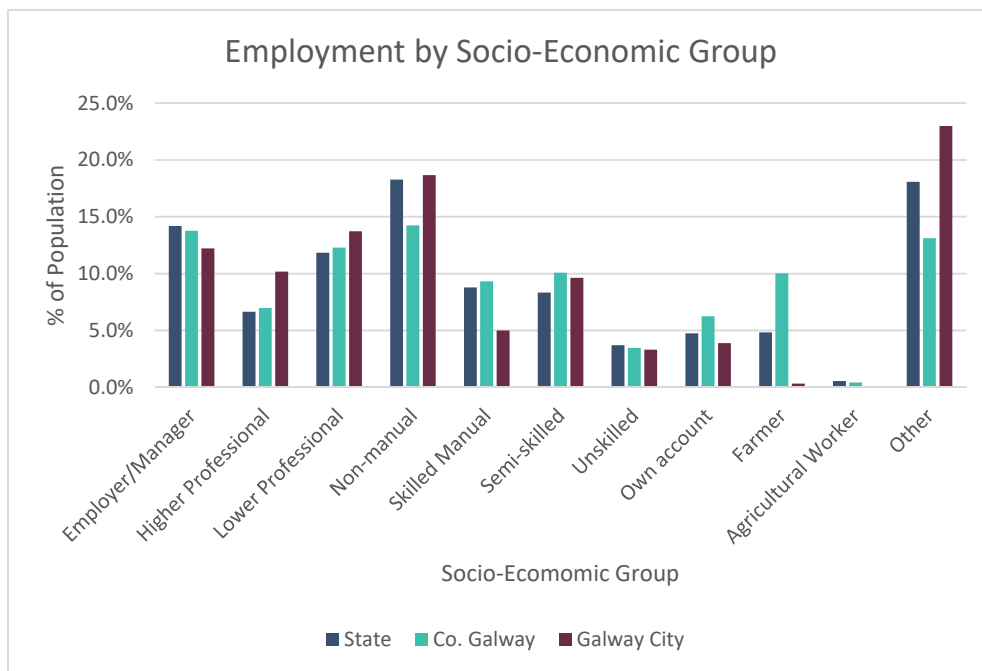


Figure 4-3 Employment by Socio-Economic Group in 2016 (Source: CSO)

The highest level of employment within Galway City was recorded in the ‘Other’ category. Approximately 23% of those employed within Galway City form part of this category, in comparison to 13.1% of the County population and 18.1% of the national population. After ‘Other’, the next highest levels of employment within the city are in the Non-manual and Lower Professional categories. The categories in which the lowest percentage of the Galway City population was recorded are Agricultural Worker (0.1% of the Study Area population) and Farmer (0.3% 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 4.3.

4.4.5 Land-use

The proposed development involves replacing the existing construction compound and scrub land with a mixture of buildings and landscaped areas.

The proposed development site is zoned as ‘Enterprise, Light Industry and Commercial’ within the Galway City Development Plan (CDP) and land bordering the site on the north, west and south-west has the same zoning. To the east and south land is mainly zoned as ‘Residential’ and interspersed with ‘Recreational and Amenity’. There are also areas zoned as ‘Community, Cultural and Institutional’, ‘Agriculture’ ‘Agricultural and High Amenity’ and ‘Low Density Residential’ in the study area. Zoning for the site is shown in Figure 4.4.

There is currently a significant shortage of housing units available for sale and occupancy in the area surrounding Galway City. The rapidly increasing price of housing is a result of the shortage in supply, and many people will soon find themselves unable to afford a home. This problem is also aggravated by a lack of housing units available for the rental market also. The proposed development will contribute significantly to alleviating the shortage of housing supply in Galway and brings into use lands zoned specifically for that purpose.

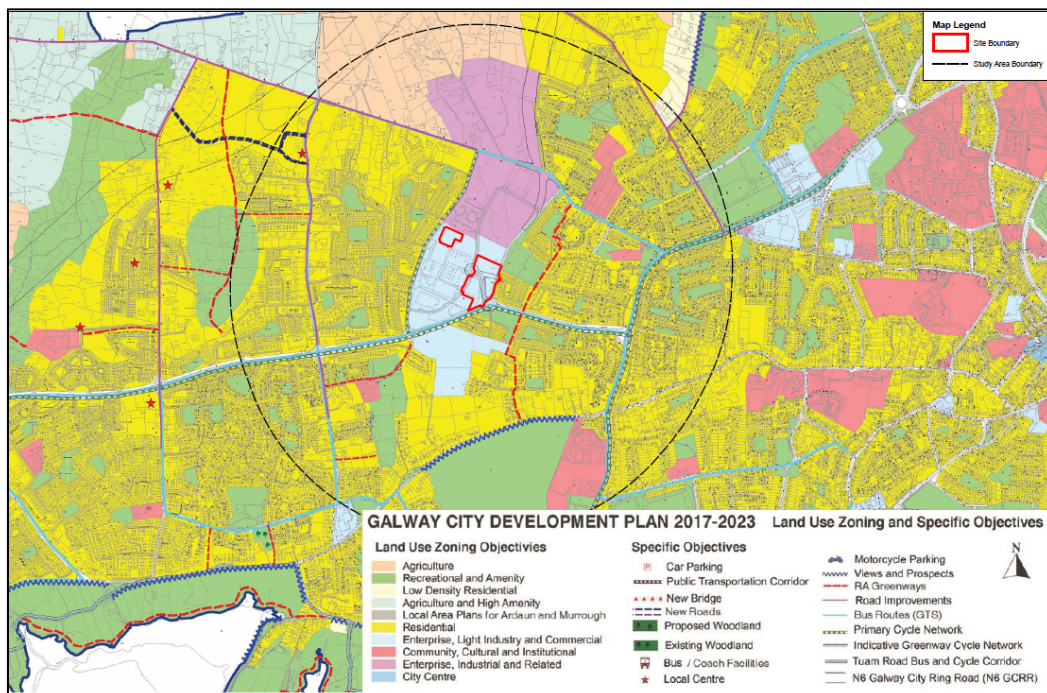


Figure 4-4 Galway City Development Plan – Land Use Zoning

4.4.6 Tourism

4.4.6.1 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 2017, total tourism revenue generated in Ireland was approximately €8.8 billion, an increase on the €8.4 billion revenue recorded in 2016. Overseas tourist visits to Ireland in 2017 grew by 3.2% to 9.0 million ('Tourism Facts 2017', Fáilte Ireland, July 2018).

Ireland is divided into eight tourism regions.

Table 4-5 shows the total revenue and breakdown of overseas tourist numbers to each region in Ireland during 2017 ('Tourism Facts 2017').

Table 4-5 Overseas Tourists Revenue and Numbers 2017 (Source: Fáilte Ireland)

Region	Total Revenue (€m)	Total Number of Overseas Tourists (000s)
Dublin	€1,981 m	5,936
Mid East	€207 m	633
Midland	€85 m	218
South-East	€271 m	954
South-West	€968 m	2,439
Mid West	€444 m	1,387
West	€694 m	1,911
Border	€271 m	746
Total	€4,921 m	14,244

The West region, in which the proposed residential site is located, comprises Counties Galway, Mayo and Roscommon. This Region benefited from approximately 13% of the total number of overseas tourists to the country and approximately 14% of the associated tourism income generated in Ireland in 2017.

4.4.6.2 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, historic architecture and buildings, beaches, marinas, a number of theatres, Sports facilities (Eamon Deacy Park, The Sportsground, Galway Racecourse, Pierce Stadium, etc.). The proposed development does not directly impact on any of these sites of existing tourism attractions.

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, Cuirt 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 protected views within the footprint of the proposed development. There is one protected linear view in the vicinity of the proposed development. This proposed development will not be visible from this view. For further information on these views, see Landscape and Visual, Chapter 10 of this EIAR.

The potential for visual impacts arising from the proposed development on the wider landscape and scenic roads is assessed in Chapter 10 of this EIAR.

4.4.7 Local Amenities

4.4.7.1 Education

The primary school located closest to the proposed development site is Gaelscoil Mhic Amhlaigh, located immediately adjacent to the northern boundary of the proposed development site. The secondary school located closest to the proposed development site is Colaiste Einde, which is located on Threadneedle Road approximately 800 metres southeast of the site. There are over 30 primary schools and 13 secondary schools within the study area for the project.

The National University of Ireland (NUI) Galway main campus is located 2.4 kilometres to the northeast of the site. Galway Mayo Institute of Technology (GMIT) is also located within the study area. It is estimated that approximately 20% of the population of Galway city are students.

4.4.7.2 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 3.3 kilometres east of the site, approximately 50 minutes' walk away or 15 minutes by bicycle. The station provides train services to Dublin, Limerick and Cork and intervening stations.

There is a bus stop on the Western Distributor Road which runs along the southern site boundary. This bus stop is covered by the 412 route. There is also a bus stop located on the access road to the existing Gateway Retail Park that is served by the 405 route. The 405 connects the Ballybane Industrial estate in the east of the city with B&Q Retail Park which is adjacent to the site, via the city centre. The 412 connects Cappagh road in Knocknacarra to the west of the site to Eyre Square and operates from early morning to late evening allowing for usage both as a commuter and as a regular service to access the greater Galway City area. 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, the provision and maintenance of pedestrian and cycle infrastructure is intended, 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.

4.4.7.3 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. Knocknacarra and Salthill), as well as in the wider Galway City. The main church located closest to the proposed development site is 1.5 kilometres northeast in the Westside area of the city.

There are a wide range of services available in the area. Retail and personal services are found throughout Galway city, with local services in the Gateway Retail Park adjacent to the site and the

Westside area of the city. The Westside Branch of the Galway City Council Library is located on Seamus Quirke Road approximately 1.5 kilometres northeast of the site. The Knocknacarra Medical Centre provides primary care services from a location approximately 0.75 kilometres southwest of the site. University Hospital Galway is located approximately 2 kilometres northeast of the site, while Bon Secours Hospital is also located within the Study Area.

4.5 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 Sections 4.7.2 and 4.7.3 below. Potential issues relating to health and safety, and amenity concerns are also discussed below.

4.6 Social and Economic Assessment

4.6.1 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 Northern & Western Regional Assembly (NWRA) recently published the Draft Regional Spatial and Economic Strategy (RSES) on the 19th November 2018 which has set out ambitious housing targets specifically for the Galway Metropolitan Area. The draft 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(A) 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 the RSES. The targets are that:

9. *Population of Galway MASP to grow by 25,000 to 2026 and by 38,300 to 2031 with the population of the City and Suburbs accommodating 19,200 to 2026 and 28,000 to 2031.*
10. *Deliver at least half (50%) of all new homes that are targeted within the MASP to be within the existing built-up footprint."*

Material amendment to the RSES resulting from a public consultation process were subject to a Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA). These documents are currently undergoing a formal consultation process.

4.7 Likely and Significant Impacts and Associated Mitigation Measures

4.7.1 Do-Nothing Effects

If the proposed residential 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 residential site would be lost. It is considered that the 'Do Nothing' impact would be permanent, negative and slight as site specific development objectives for the proposed development site include a requirement for a minimum of 20% residential/residential commercial development at the site. This will contribute to the much needed housing stock of Co. Galway.

4.7.2 Construction Phase

4.7.2.1 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. All site staff will be made aware of and adhere to the company Health and Safety Plan.
- Operate a Site Induction Process for all site staff,
- Ensure all site staff will have current 'Safe Pass' cards,
- Install adequate site hoarding to the site boundary,
- Maintain Site Security staff at all times,
- Install access security in the form of turn-styles and gates for staff,
- Separate public pedestrian access from construction vehicular access,
- 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

Short-term slight Negative Impact.

Significance of Effects

Based on the assessment above there will be no significant effects

4.7.2.2 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

Short-term Positive impact

Significance of Effects

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

4.7.2.3 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 community.

Residual Effect

No negative impact

Significance of Effects

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

4.7.2.4 Tourism

During the construction phase of the proposed development, there will be no negative impact on tourism, as there are no tourist attractions in the immediate vicinity of the subject site

Residual Effect

No negative impact

Significance of Effects

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

4.7.2.5 Land-use

The construction phase involves a change in land use of the site from a previous vacant site and construction compound, to use as a temporary construction site. These activities will result in a permanent change in land-use to one of residential and commercial use. This is considered to be a permanent positive impact on an area of land that had no current use.

Residual Effect

No negative impact

Significance of Effects

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

4.7.2.6 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

No negative impact

Significance of Effects

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

4.7.2.7 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 described in Section 9 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 at residential or commercial receptors. Due to the close proximity of the school (north of site) i.e. school building is some 10m distance from site boundary, there is a potential for the adopted criteria to be exceeded when construction works are taking place immediately along the northern works boundary. This assumes, however, that all items of equipment assessed are operating simultaneously along this boundary. Given that these noise levels constitute worst case conditions with the listed construction activities all being conducted at the closest development area to the nearest noise sensitive location, actual construction noise level emission will likely be lower in actuality. Notwithstanding, suitable noise mitigation measures must be adopted to reduce the noise exposure at this location e.g. restricted operating hours during school times when works are within 25m distance of northern site boundary

Best practice measures for noise control 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 0700-1900 h, and Saturday 08:00-17:00 h.
- restricted operating hours during school times when works are within 25m distance of northern site boundary
- 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.

- All onsite generator units (if required) used to supply electricity to the site shall be super silenced or enclosed and located away from any receptor.
- Where it is proposed to operate plant during the period 0700-0800 h, standard 'beeper' reversing alarms will be replaced with flat spectrum alarms.
-

Additional mitigative measures are outlined in Chapter 9.

Residual Effect

Short-term slight Negative Impact

Significance of Effects

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

4.7.2.8 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 debris to the public road, particularly if the weather is wet resulting in dust when the debris dries. This may cause nuisance to residents and other road users, thereby creating a short-term slight negative impact.

Mitigation

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.
- 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.
- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods. Material stockpiles containing fine or dusty elements shall be covered with tarpaulins. Aggregates will be transported to and from the site in covered trucks.
- 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.
- Where drilling or pavement cutting, grinding or similar types of stone finishing operations are taking place, measures to control dust emissions will be used to prevent unnecessary dust emissions by the erection of wind breaks or barriers.
- All concrete cutting equipment shall be fitted with a water dampening system. During peak vehicle movements, where there is a likelihood of dirt on construction vehicles exiting the site, a dedicated road sweeper will be put in place until these works are completed.
- Deploy Road Sweeper as required on External Roads.

Residual Effect

Short-term Imperceptible Negative effect.

Significance of Effects

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

4.7.2.9 Traffic

Construction traffic travelling to the proposed development site will access the site via the roundabout to the east of the site on the Western Distributor Road, which also provides access to Gort Na Bró. Specific control measures, such as a site marshal, will be implemented to fully segregate construction traffic from external pedestrian traffic.

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 existing Western Distributor Road/ Gort Na Bró roundabout, allowing delivery vehicles to pull off the site, there will be no significant disruption on the traffic flows on the Western Distributor Road 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 Western Distributor Road roundabout. The potential impacts for traffic and transportation are discussed in detail in Section 12 of this EIAR.

Residual Effect

Short-term Slight Negative Impact.

Significance of Effects

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

4.7.3 Operational Phase

4.7.3.1 Health and Safety

Upon completion, the proposed development is unlikely to have any negative significant impact on human health.

The design, layout and separation distances of the houses and apartment blocks have been designed to optimise the ingress of natural daylight/sunlight and to incorporate passive surveillance, with all units designed to include secure, passively surveyed, own door access.

Residual Effect

long-term imperceptible, neutral impact

Significance of Effects

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

4.7.3.2 **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

long-term moderate positive impact

Significance of Effects

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

4.7.3.3 **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 City Development Plan.

Residual Effect

No negative impact

Significance of Effects

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

4.7.3.4 **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.

Residual Effect

slight, positive, long term impact

Significance of Effects

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

4.7.3.5 **Land-use**

The site is currently partially a greenfield site and partially a construction compound. The proposed residential development will result in a change of land-use to residential and commercial. The total proposed area to be upgraded measures approximately 2.8 hectares in area. The change in the land-use

of this area would be significant in the context of the local and wider area, with resultant permanent moderate positive impact on land-use.

Residual Effect

Permanent moderate positive impact

Significance of Effects

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

4.7.3.6 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 9 of this EIAR.

Residual Effect

Permanent, imperceptible, neutral impacts

Significance of Effects

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

4.7.3.7 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 Section 8 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

Permanent, imperceptible, neutral impact

Significance of Effects

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

4.7.3.8 Traffic

The Traffic and Transport Assessment, as presented in Section 12 of the EIAR, calculates that during the operation phase of the proposed residential development, access to the subject site is to be facilitated via the existing road infrastructure and a proposed link road from Gort Na Bró to the existing internal roundabout at the Gateway Retail Park. 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 118 trip movements are expected during the AM peak period and 165 movements during the PM peak period. Details of the TRICS data utilised are included in Appendix A of the Traffic and Transport Assessment Report (Appendix 4.1 of this EIAR).

Further details on the traffic and transportation impact assessment are presented in Section 12 of this EIAR

Mitigation

Mitigation measures proposed during the operational stage are as follows;

- Provision of Link Road realignment and upgrade to L5000 in advance of N6 GCRR works
- Upgrade to L5000 including widening and provision of two-way cycle lanes and footpaths.
- Provision of new traffic signals at the junction between the Link Road and L5000
- Provision of suitable road markings and road traffic signs in accordance with the Traffic Signs Manual.

- Provision of a lay-by type bus stop on Link Road
- Improvement to pedestrian permeability and connectivity in the area by provision of additional pedestrian links through the development.
- Provision of the residential parking ratio of 0.8 per apartment keeping in line with the National and EU policies to reduce car ownership and carbon footprint
- Provision of cycle parking facilities, sheltered and secure
- Provision of e-charging parking places
- Provision of car club facility
- Provision of Mobility Management Plan for employees and residents.

Residual Effect

long-term negligible negative effect

Significance of Effects

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

4.7.3.9 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 residential 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. are limited.

Mitigation

There is no site specific mitigation required for the proposed residential 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 Section 7 of this EIAR. 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 residential site with the potential to cause environmental or health effects.

Residual Effect

Unlikely Imperceptible Temporary Negative Impact

Significance of Effects

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

4.7.4 Cumulative Effect

The potential cumulative effects between the proposed restoration works and the other projects described in Section 2 of this report, hereafter referred to as the other projects, have been considered in terms of impacts on human beings.

4.7.4.1 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.

4.7.4.2 Dust and Noise

Potential cumulative effects associated with dust and noise are addressed in Sections 8.3.5.2 and 9.6 of this ER respectively and conclude that there will be imperceptible effects

4.7.4.3 Traffic

Potential cumulative effects associated with traffic are addressed in Sections 12.1 of this ER. The findings of the assessment indicate that there are no other developments proposed in the area that would result in potential cumulative traffic impacts with the proposed project.

4.7.4.4 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 positive impact on their cash flow.

4.7.4.5 Population

Those working within the proposed residential site and the other projects in the area during the construction phase, will travel daily to the site from the wider area. These projects will have an imperceptible impact on the population of the Study Area in terms of changes to population trends or density, household size or age structure.

4.7.4.6 Land-use

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

The impact of the proposed residential site is negligible as the site will have a positive impact on the surrounding area, on a site that previously had no other use. As there will be a negligible impact the potential for cumulative impacts are negligible.

4.7.4.7 Tourism and Amenity

There are no tourist attractions in the immediate vicinity of the proposed residential site. Key tourist attractions within the wider area of Galway City include NUI Galway, theatres, Sports facilities, etc as noted above in Section 4.4.6.2

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 residents and tourists within the area will allow for a positive influence on local tourism.