

4 POPULATION & 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 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 Órla Murphy and reviewed by John Staunton and Michael Watson, all MKO. Órla is an Environmental Scientist with over 2 years' experience in private practice in both Scotland and Ireland; where she has completed numerous EIAs and has experience composing a variety of EIAR chapters; relating to residential development. She holds a BSc (Hons) in Geography and a MSc in Environmental Protection and Management.

John Staunton is a Project Environmental Scientist and Michael Watson is a Project Director with MKO; with over 9 and 17 years of experience in the environmental sector respectively. Their environmental experiences involve report writing of Environmental Reports (ER), Environmental Impact Statements/Environmental Impact Assessment Reports (EIS/EIAR) & Strategic Environmental Assessments (SEA) as well as project management of a variety of small and large scale jobs, including residential and commercial development projects.

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 EIA 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 eastern 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 primarily within Mervue DED, as shown in Figure 4.1, alongside An Caisleán Gearr DED, Baile an Bhriotáihg DED, Wellpark DED and Ballybaan DED.

4.4 Receiving Environment

4.4.1 General Site Description

The site of the subject development is located in Mervue, Galway City, approximately 2.1km northeast of Eyre Square in Galway City Centre.

The proposed development site, which has an area of circa 5.12 ha, is Phase 2 of a two-phase plan. The site is currently a brownfield site, and a recently reactivated construction site, already partially developed, with evidence of previous site clearance and levelling apparent. The proposed mixed-use development will result in a change of land-use to a matrix of residential land, commercial, and amenity. Access to the site will be gained from the existing entrance located off the existing local road between the Monivea Road (R339) and Tuam Road (R336).

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

1. A residential scheme comprising 288 no. apartments and amenity accommodation with a gross floor area of 32,379 sqm, which will include:
 - Block G (104 no. units); Block H (136 no. units) and Block J (48 no. units).
 - 75 no. one-beds (26%); 185 no. two-beds (64.2%); and 28 no. three-bed units (9.7%)
 - Ancillary residential amenity areas (1,275 sqm).
 - Block G extends to eight-storeys, Block H extends to seven-storeys and Block J extends to five-storeys.
 - External balconies are provided on all elevations.
2. A commercial scheme with a cumulative gross floor area of 4,096 sqm, which will include:
 - A neighbourhood facility comprising a restaurant (500 sqm), café (50 sqm), local convenience store (225 sqm), a pharmacy (200 sqm), 5 no. retail/commercial units (797 sqm in total), a crèche (310 sqm)
 - A fitness/leisure facility (1,140 sqm); and
 - A medical centre (655 sqm).
3. Public realm and landscaping works, including pedestrian and cyclist linkages.

4. Vehicular access to the double basement permitted under Pl Ref 18/363 and the allocation of 288 no. car parking spaces located on the lower basement level to service the residential units. Visitor car parking will be provided on the upper basement level and will be managed in accordance with an Operational Management Plan and a Mobility Management Plan.
5. The provision of a dedicated cyclist ramp and 733 no. secure bicycle parking spaces located in the upper basement permitted under Pl Ref 18/36 (comprising 529 no. residential; 144 visitor parking and 60 no. bicycle parking spaces to service the neighbourhood facility).
6. All other associated site development, plant and servicing works.
7. The application will be supported by an Environmental Impact Assessment Report and a Natura Impact Statement.

There are numerous existing housing developments, and retail premises located within 500m of the proposed development site. Other permitted and proposed developments are also located in the area surrounding the site, with the most significant described in Section 2.6.2 of this EIAR. The nearest residential housing is located along the Monivea Road to the south.

The primary land-use in the area surrounding the site comprises residential and commercial land-use.

4.4.2 Population

4.4.2.1 Population Trends

In the four years between the 2011 and the 2016 Census, the population of Ireland increased by 8.2%. During this time, the population of Galway City grew by 4.2% to 78,668 persons. Other population statistics for the Republic of Ireland, City and County 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		% Population Change
	2011	2016	2011-2016
Republic of Ireland	4,588,252	4,761,865	3.8%
Co. Galway	175,124	179,390	2.4%
Galway City	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.

4.4.2.2 Population Density

The population densities recorded within the Republic of Ireland, Co. Galway and Galway City during the 2016 Census are shown in Table 4.2.

Table 4.2 Population Density in 2016 (Source: CSO)

Area	Population Density (Persons per square kilometre)
Republic of Ireland	69.6
Co. Galway	29.9
Galway City	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.

4.4.2.3 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 Households and Average Household Size 2011 – 2016 (Source: CSO)

Area	2011		2016	
	No. of Households	Avg. Size (persons)	No. of Households	Avg. Size (persons)
Republic of Ireland	1,654,208	2.8	1,697,665	2.8
Co. Galway	62,456	2.8	63,040	2.8
Galway City	27,726	2.7	28,859	2.7

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 similar or less 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 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 4.2.

Table 4.4 Population per Age Category in 2016 (Source: CSO)

Area	Age Category				
	0 - 14	15 - 24	25 - 44	45 - 64	65 +
Republic of Ireland	21.1%	12.1%	29.5%	23.8%	13.4%
Co. 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 Galway City population within the 15-24 and 25-44 age categories is slightly higher than those recorded at national and County level with the remaining categories being slightly lower. Within Galway City, the highest population percentage occurs within the 25-44 age category.

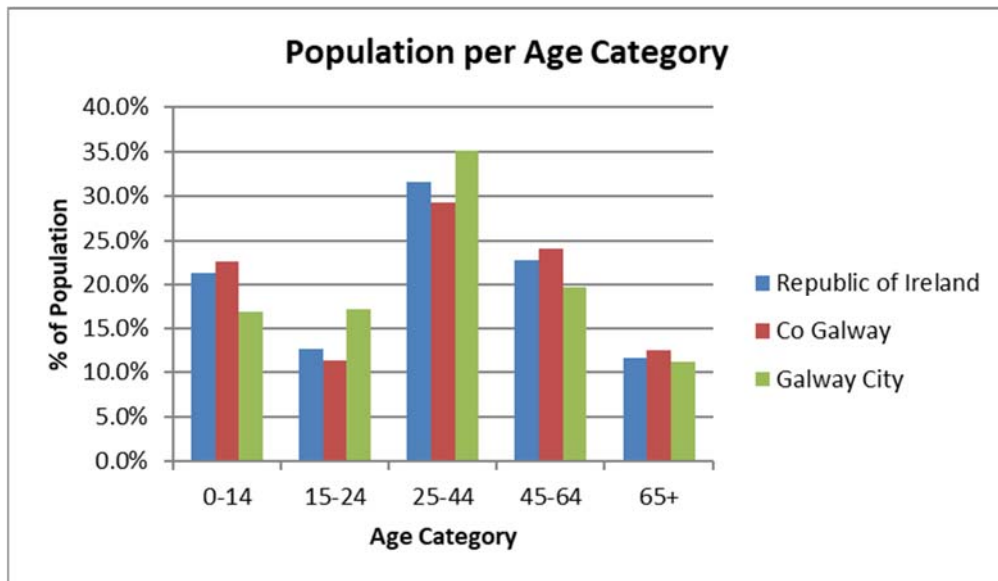


Figure 4.2 Population per Age Category in 2016 (Source: CSO)

4.4.4 Employment and Economic Activity of Galway

4.4.4.1 Economic Status of the Study Area

The labour force consists of those who are able to work, i.e. those who are aged 15+, out of full-time education and not performing duties that prevent them from working. In 2016, there were 3,755,313 persons in the labour force in the Republic of Ireland. Table 4.5 shows the percentage of the total population aged 15+ who were in the labour force during the 2016 Census. This figure is further broken down into the percentages that were at work, seeking first time employment or unemployed. It also shows the percentage of the total population aged 15+ who were *not* in the labour force, i.e. those who were students, retired, unable to work or performing home duties.

Table 4.5 Economic Status of the Total Population Aged 15+ in 2016 (Source: CSO)

Status	Republic of Ireland	Co. Galway	Galway City
% of population aged 15+ who are in the labour force	61.4%	61.3%	61.3%
% of which are:			
At work	87.1%	88.3%	87.1%
First time job seeker	1.4%	1.1%	1.6%
Unemployed	11.5%	10.6%	11.3%
% of population aged 15+ who are not in the labour force	38.6%	38.7%	38.7%
% of which are:			
Student	29.4%	27.7%	44.2%
Home duties	21.1%	22.5%	14.3%
Retired	37.6%	38.3%	31.7%
Unable to work	10.9%	10.7%	8.5%
Other	1.0%	0.8%	1.4%

Overall, the principal economic status of those living in Galway City is similar to that recorded at national and County level. The main difference is in the 'Student' category which is higher than that at national and County level.

4.4.4.2 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.

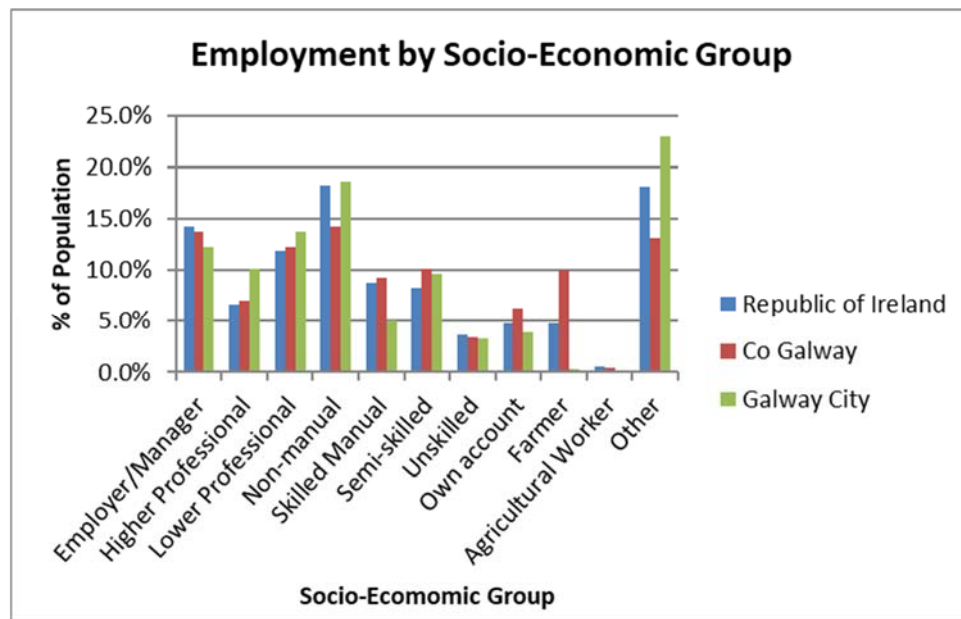


Figure 4.3 Employment by Socio-Economic Group in 2016 (Source: CSO)

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 built and disturbed ground with a mixture of buildings and landscaped areas. The current site is a derelict building site and contains numerous potentially hazardous features such as large excavations, trip hazards and protruding steel. The proposed development masterplan will ensure that all excavations are filled with basements and/or soil and stone, and the entire site is left in a safe state. Once complete the landscaped areas will offer a useful amenity area for residents and those working within the site as well as for people in the locality.

The proposed new buildings will provide much needed services for Mervue and the greater city of Galway, most notably the provision of residential space.

Within the Galway City Development Plan 2017 an Enterprise, Light industry and Commercial land use zoning covers the site of the proposed development. Other land use zoning objectives which are mapped in the area surrounding the site include Residential; Enterprise, Industrial and Related, and small areas of Recreational and Amenity. This is shown in Figure 4.4.

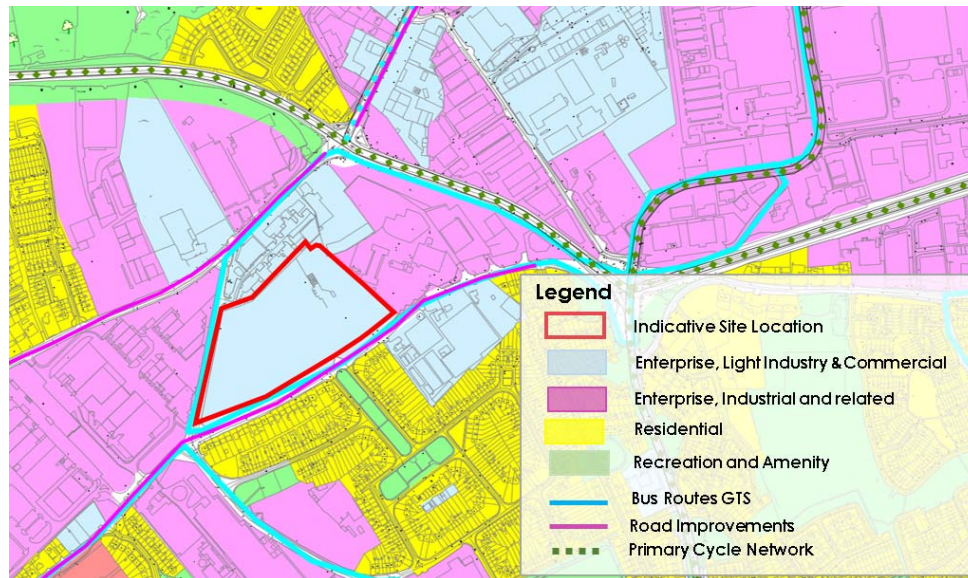


Figure 4.4: Land Use and Zoning and Specific Objectives (Source: Galway City Development Plan)

4.4.6 Services

The site of the proposed development is located within the environs of Galway City, where services are generally found throughout the city. There are numerous services found in the area surrounding the site of the proposed development. These include retail services, hospitality/tourism services (hotels, car rental, etc.), medical (doctor' clinics are located in the Terryland Retail Park and the Liosbán Industrial Estate and sporting facilities (Eamonn Deacy park, Galway City Karting, etc). Galway water treatment facility is located approximately two kilometres west of the proposed development site.

4.4.7 Tourism

4.4.7.1 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. 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 4.6 shows the total revenue and breakdown of overseas tourist numbers to each region in Ireland during 2017 (*Tourism Facts 2017*; Fáilte Ireland, July 2018).

Table 4.6 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	14,224

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.

4.4.7.2 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.). The proposed development does not directly impact on any of these sites of existing tourism attractions. The adjacent Menlo Park Hotel, Nox Hotel, Maldron Hotel and other tourist accommodations in the wider area will attract a significant number of tourists to stay.

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 views within the footprint of the proposed development. There are a number of views in the vicinity of the proposed development, with the closest view being approximately 300 metres from the proposed development. For further information on these views, see Landscape and Visual, Chapter 10 of this EIAR.

4.4.8 Local Amenities

4.4.8.1 Education

The primary school located closest to the proposed development site is the Holy Trinity National School, located in Mervue, approximately 800 metres southeast of the proposed development site. The secondary school located closest to the proposed development site is Galway Community College, which lies approximately 650 metres southwest of the site.

The third-level institution of Galway-Mayo Institute of Technology (Cluain Mhuire Campus) is located approximately 1 kilometre southeast of the proposed development site. The National University of Ireland (NUI) Galway main campus is located 2.3

kilometres to the southwest of the site. It is estimated that approximately 20% of the population of Galway city are students.

4.4.8.2 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 2.1 km south west of the site, approximately 30 minutes' walk away. The station provides train services to Dublin, Limerick and Cork and intervening stations.
- There are several bus stops along the roads within 100m of the site providing regular local services. These provide transport to the city centre, and further west to Ballybrit and the Tuam road. 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.

4.4.8.3 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. Mervue, Ballybane and Wellpark), as well as in the wider Galway City. The main church located closest to the proposed development site is 650m southeast in Ballybane, with numerous smaller churches within one kilometre.

There are a wide range of services available in the area. Retail and personal services are found throughout Galway city, with local services in Wellpark, Liosbaun, and Ballybane. Galway City Council has a branch library in Ballybane.

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 EIA. 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:

“1. 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.

2. Deliver at least half (50%) of all new homes that are targeted within the MASP to be within the existing built-up footprint.”

It is anticipated that the RSES will be adopted in the first half of 2019.

4.6.2 Employment Impacts

The Western Development Commission (WDC) insight report on Census 2016 data pertaining to Galway City¹ notes that the City had a total population of 78,668 in 2016, 4.2% higher than at the last Census (2011). Galway City’s population was 8.6% higher than a decade earlier (2006). Total employment among Galway City residents grew 10.8% between 2011 and 2016, similar to national growth (11%). Some 61.3% of Galway City’s adults are in the labour force, either working or looking for work, close to the national average (61.9%) (Figure 4.5). The 40,126 people in the city’s resident labour force represent a 3.4% increase on the 2011 figure².

¹ WDC Insights (2017) ‘Galway City’s Labour Market – Census 2016’. Available on: <http://www.wdc.ie/publications/reports-and-papers/>

² All data from CSO, Census 2016 Summary Results – Part 2. Table EZ011

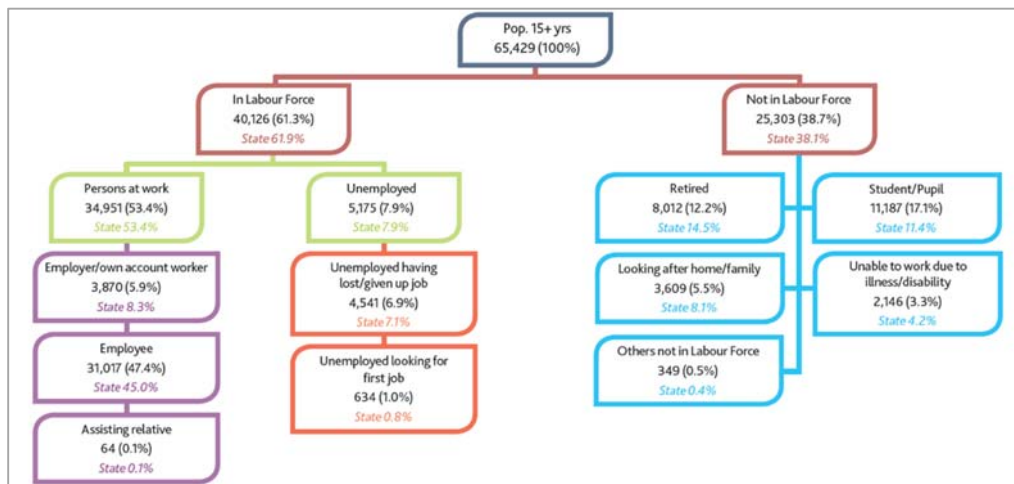


Figure 4.5 : Population of Galway City aged 15 years and over by principal and labour force status, 2016. (Figure extracted from WDC Insights Report (2017) 'Galway City's Labour Market – Census 2016')

In terms of sectoral pattern and recent changes in employment, Census 2016 revealed that Industry and Health are significantly more important employers for Galway City residents than nationally. Growth in Industry since 2011 was substantially higher than the national average (15.4% v 9.4%), as was growth in Health (16.4% v 13.4%). Accommodation & Food Service accounts for a substantially higher share of employment than nationally, 9.9% compared with 5.8%; only Kerry has a higher share. Growth in Accommodation & Food Service in Galway City was somewhat below average (11.1% v 12.9%) since 2011. Unlike elsewhere in the Western Region, Information & Communications employs a higher share of Galway City's population than nationally and it experienced the city's strongest employment growth since 2011, up 36% compared with 31.4% nationally. It is noted that growth in Professional, Scientific & Technical was less than half the average (9.3% v 22.2%), while the 10.7% decline in Financial, Insurance & Real Estate in the city was far greater than the 1.3% decline nationally³.

The masterplan for Crown Square comprises a mixture of commercial, hotel and residential uses on an integrated campus with complementary and neighbourhood facilities. The Phase 2 residential buildings will be developed to a high standard and it is envisaged that they will be occupied by those working within the wider area. It is anticipated that approximately 350 construction workers will be employed during the construction period. It is considered that construction phase and operational phase will also have an indirect spin-off impacts on ancillary services in the area of the proposed site, such as retail services, building supply services, professional and technical professions etc.

4.6.3 Social Considerations

In addition to the potential for significant job creation in the local area (as noted above), the proposed scheme encompasses a number of planning gain features for the wider area:

³ WDC Insights (2017) 'Galway City's Labour Market – Census 2016'. Available on: <http://www.wdc.ie/publications/reports-and-papers/>

Public Realm: publicly accessible high quality landscaped spaces are proposed at ground level. The proposed Crown Square site presents visitor/users with a relaxing space for both office workers, hotel guests and local residents, as well as the flexibility to host occasional informal events. The landscaped space between and around buildings and the site edges provides public amenity and biodiversity. It is also an integral part of the architectural design of the site. Design extends to both soft and hard landscape and supports an accessible, safe and high-quality approach to building approach and site permeability (Figure 4.6). A key element of the architectural design is the proposed removal of the hard line of leylandii trees from the public realm along the Monivea Road (which has been permitted under Pl Ref 18/363). This provides an opportunity for a wider, shared landscape margin between the public road and the building line including cycle lane, bus and other vehicular off-road set-down.

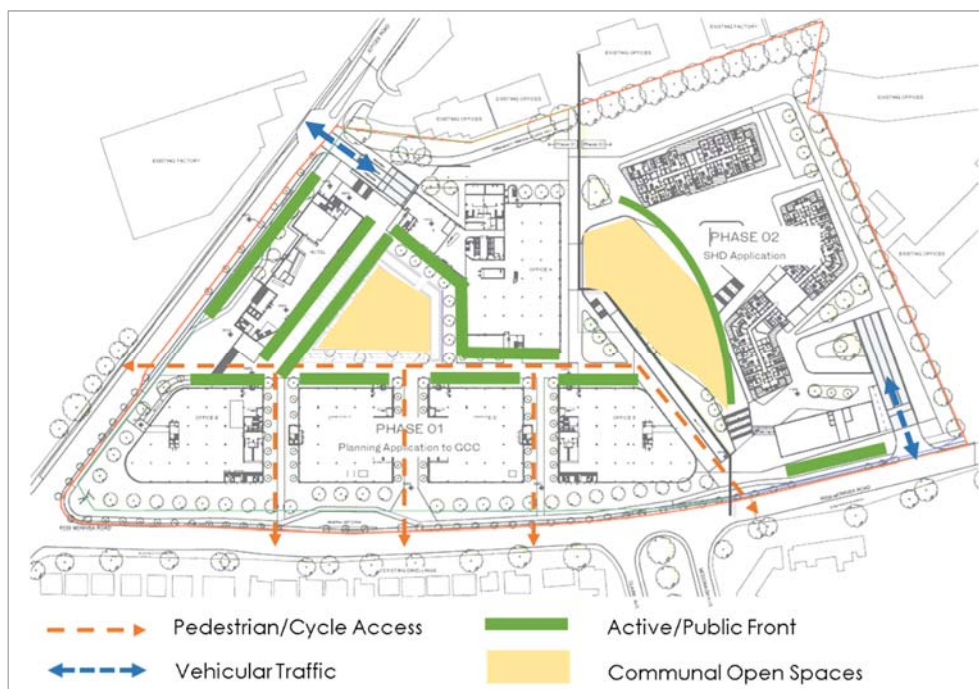


Figure 4.6: Movement & Accessibility Strategy

Social Spaces: the proposed landscaping scheme provides for the creation of smaller individual raised spaces, enclosed by raised planters, in which outdoor café seating will be located just off the main pedestrian access route. These intimate seating spaces will enjoy a more sheltered microclimate.

Neighbourhood Centre: the proposed site is identified as a 'Neighbourhood Centre' in the extant GCDP. The proposed scheme will encourage a diversity of uses to sustain an animated and vibrant public realm of streets and urban spaces. The currently proposed phase of the scheme will include complementary neighbourhood facilities including a restaurant, café, local convenience store, a Medical Centre (potential a Primary Care Centre), a pharmacy and other small retail/service outlets (e.g. hairdressers). These are proposed at ground/ lower ground and first floor levels fronting both Monivea Road and the new Phase 2 public open space.

In conclusion, it is considered that the proposed development would bring significant socio-economic benefits to the community and be a catalyst for further investment in the area.

4.7 Likely and Significant Impacts and Associated Mitigation Measures

4.7.1 Do-Nothing Impact

The site comprises an excavated partially constructed commercial development which was hoarded up for many years following the economic downturn. It is currently a newly reactivated construction site for Phase 1 of the site masterplan. Phase 1 of the development (which includes Commercial Offices (Blocks A-E), Hotel and Site Infrastructure, including all basement structures for the entire site) has received permission, and will be constructed regardless of whether this currently proposed phase 2 is permitted or not. 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. The potential to complete work on the site would be lost. It is considered that the 'Do Nothing' impact would be permanent, negative and slight as the site would only be partially completed, and the proposed development site is zoned for development and will contribute to the much-needed housing space of 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.
- 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 during construction.
- The site will also be secure to prevent the risk of trespass through signage and provision of barriers.

Residual Impact

Medium-term Imperceptible 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 Impact

Short-term Positive impact.

Significance of Effects

Based on the assessment above there will be no significant negative 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 Impact

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 vicinity of the subject site.

Residual Impact

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 derelict construction site, which has no current activity, to use as a temporary active 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 Impact

Permanent positive 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 Impact

Medium to long term positive 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 EIA.

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 receptors. The 70 dB office building criterion will also not be exceeded where a small number of plant items operate simultaneously. If it is necessary to undertake rock breaking along the northern or eastern boundaries, noise levels received at the Eir building, and at the office building outside the northwest corner of the site, may rise towards the 70 dB criterion, or may slightly exceed it, and the following mitigation measures are recommended here:

- It is recommended that management at these buildings be given adequate advance notice.
- As the duration of breaking may be shortened to several hours by using two or more breakers simultaneously, it may be possible to agree suitable breaking periods which allows shorter intense breaking, thus completing the operation more quickly.
- Alternatively, it may be practical to carry out breaking near these buildings on a Saturday, when the buildings are less occupied.
- The use of quiet breakers is recommended. Such breakers typically produce sound pressure levels which are 2-5 dB lower than conventional units.
- Depending on the location of breaking, it may be feasible to insert a temporary barrier between the breaker and the office buildings. The requirement for a barrier, and the specific dimensions and type, may be determined following identification of locations to be broken out.

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 0800-1900 h, and Saturday 08:00-14:00 h.
- 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.
- During the construction phase, an increased number of trucks may arrive at the site during certain activities eg. during concrete pours. It is recommended

that a management plan be drawn up to prevent unnecessary congregation of trucks around the site entrance, and that queuing is prohibited on Monivea Road.

Residual Impact

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 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.

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.
- 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 Impact

Short-term Imperceptible Negative Impact.

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 Phase 2 development site at Joyce's Road, Galway City will initially use the existing entrance located off Joyce's Road. The new Monivea Road entrance will assist to serve the site for construction access to Phase 1 and Phase 2. This approach will assist the health and safety of the construction site during the various construction phases.

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 phases of the development. Due to the designated access points off the

existing Joyce's Road and Monivea Road, allowing delivery vehicles to pull off onto the site, there will be no significant disruption on the traffic flows on Joyce's Road or Monivea 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 Joyce's Road and Monivea Road. Overall there will be a short-term not significant negative impact to local traffic during the construction phase.

4.7.2.9.1 Mitigation measures during the construction phase

As with any construction project, the contractor will be obliged to prepare a comprehensive traffic management plan for the construction phase. The purpose of such a plan is to outline the measures to manage the expected construction traffic activity during the construction period. In the interim, however, this section will provide a preliminary overview of the likely volume and routing of construction vehicles, based on a most likely scenario of construction.

The site as proposed would be expected to require approximately 3 years to complete from commencement of works. Parking for site operatives will be a requirement throughout the contract. It would be expected that a site of this size would generate a requirement for in the region of 300 site operatives during the peak period of construction, and would lead to a parking requirement for up to about 100 vehicles. This could be accommodated within the curtilage of the site.

It is assumed that most construction traffic approaching the site will travel via the R336 Tuam Road and R339 Monivea Road. Again, the Traffic Management Plan for the construction stage would identify haulage routes and restrictions as appropriate in discussion with the Local Authority.

There will also be a requirement for comprehensive measures as part of the construction management, such as:

- Temporary warning signs;
- Banksmen controlling access and egress from the site;
- All marshalling areas and site offices will be contained within the site boundary and will therefore have little impact on external roads;
- Wheel washers/judder bars to clean off vehicles exiting the site during spoil removal;
- All loads to be properly stowed and secured with a tarpaulin, where appropriate;
- Routine sweeping/cleaning of the road and footpaths in front of the site;
- No uncontrolled runoff to the public road from dewatering/pumping carried out during construction activity.
- Hoarding will be provided along the site frontage to protect pedestrians using the footpaths.

Any increase in volumes on the surrounding highway network as a result of the proposed development's construction traffic will likely have a short-term insignificant impact.

4.7.2.9.2 Residual Impact

Overall there will be a short-term not significant negative impact to local traffic during the construction phase.

4.7.2.9.3 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.

Residual Impact

No negative impact.

Significance of Effects

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

4.7.3.2 Employment and Investment

The proposed residential development will result in the creation of permanent full and part-time employment positions in the area in the commercial areas. Those to be employed at the proposed site will be from the local community so any increased revenue from this employment returns directly to the local community.

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 Impact

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 short and long term 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 Impact

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.

4.7.3.5 Land-use

The site is currently a brownfield site, and a recently reactivated construction site having been a derelict partially completed construction site for many years. The proposed mixed-use development will result in a change of land-use to a matrix of amenity land, commercial, and residential. The total proposed area to be upgraded measures 5.1 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 Impact

Permanent moderate positive impact.

Significance of Effects

Based on the assessment above there will be positive 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.

Mitigation

No mitigation will be required on site as the impact is assessed as being imperceptible.

Residual Impact

Imperceptible negative impact.

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.

Residual Impact

Imperceptible negative impact.

Significance of Effects

Based on the assessment above there will be no significant effects

4.7.3.8 Traffic

Access to the proposed development is to be facilitated via the new junctions access locations and improvement to the existing road infrastructure proposed as part of the project. This includes the provision of new traffic lights at junction of Joyce's road and Tuam Road; the upgrading of the traffic lights at the junction of Joyce's Road / Well Park Road / Monivea Road / Connolly Avenue; the provision of cycle lanes and bus lanes along Joyce's Road and Monivea Road and the provision of set down areas and bus stop. TRICS data for similar sized developments were obtained in order to inform the trip rate associated with such a development. It is anticipated that 564 trip movements

are expected during the AM peak period and 505 movements during the PM peak period. Details of the TRICS data utilised are included in Appendix C of the Traffic and Transport Assessment, which is itself included as Appendix 12-1 of this EIA. Overall there will be a long-term slight impact to local traffic

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

Mitigation

As population grows throughout Ireland and in particular, in popular towns like Galway City, a continued increase in traffic volumes is not sustainable. As a result, an ever-increasing approach by designers and planners to providing sustainable commuting alternatives is required. The use of public transport and promotion of walking and cycling will ultimately increase the overall quality of life for the people living in these fast paced, busy towns and villages located within commuter belts.

The proposed development has integrated a number of measures in line with the relevant standards and guidelines, such as DMURS 2013 and the National Cycle Manual, which promotes the use of sustainable travel to and from the site. The Road Safety Audit carried out for the site allowed the design team to address any concerns initially flagged in the Road Safety Audit. A continued and collaborative approach with the road safety auditors meant that a desirable and safe external road layout could be achieved without negatively impacting the overall quality of the development.

The use of the private car will still be maintained as a primary mode of transport for a number of the visitors, staff and residents in the development. Trip generations to and from the proposed development are 564 in the morning peak and 505 in the evening peak as noted above. The external roads and junctions on the development have been designed in accordance with the DMURS manual. Liaison was sought with Galway City Council Roads & Traffic Department in relation to the roads and traffic.

The proposed development is suitably located close to a number of amenities located in Galway City including, schools, shops, sports facilities etc. The majority of these amenities are within a reasonable walk of the proposed development. The area also offers a variety of public transport options with the nearest bus stop adjacent to the site.

Mitigation measures proposed during the operational stage are as follows;

- Provision of two access points to distribute development traffic onto the R336 Tuam Road and the R339 Monivea road;
- Provision of suitable road markings and road traffic signs in accordance with the Traffic Signs Manual.
- Provision of cycle lanes and bus lanes along Joyce's Road and Monivea Road
- Provision of traffic lights at the junction of Joyce's Road and Tuam Road. This will include a pedestrian crossing facility and improve safety for right turning vehicles.
- Upgrading of the existing traffic signals and junction layout at Joyce's road/Monivea Road/Connolly Avenue/Well Park Road
- Provision of a lay-by type bus stop on Monivea Road
- Provision of drop off points on Joyce's Road and Monivea Road to preclude vehicles stopping on the carriageway.

Residual Impact

There is an overall reduction in traffic movement when the currently proposed development is compared with the previously consented development. The volumes of traffic generated from the currently proposed development will have a long-term slight negative effect on the surrounding roads and highway network traffic volumes and can be considered within the norms for urban developments.

It should be noted that if the construction of the proposed N6 Galway City Outer Ring Road proceeds and the predicted reduction in traffic volumes, on the existing N6, occur then as a result of the proposed development there will be an imperceptible impact.

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

The proposed 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 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 EIA. 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 Impact

Unlikely Imperceptible Temporary Negative Impact.

Significance of Effects

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

4.7.4 Cumulative Impacts

The potential cumulative impacts between the proposed development and other projects described in Section 2.6.2 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 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 impacts associated with noise are addressed in Section 9 of this EIA and conclude that there will be no adverse noise impact on the local population or human health.

In regard to dust, mitigation measures addressed in Section 8.3.1.2 of this EIAR will ensure there are no significant effects on local population or human health.

4.7.4.3 Traffic

Potential cumulative impacts associated with traffic are addressed in Section 2.6.2 of this EIAR.

The planning application for the N6 Galway City Ring Road (N6 GCRR) has been finalised and is believed to have been submitted to An Bord Pleanála following government approval. The N6 GCRR is a key component of the Galway Transport Strategy (GTS) which realises Galway City and County Councils' vision of all elements of transport working together to achieve an integrated sustainable transport solution. This new road infrastructure was designed to remove through traffic from the N6 and will therefore facilitate access to the subject development. Based on the N6GCRR Route Selection Report Volume 3A Table 7.5.1 and Fig 7.5.1 the predicted volume of traffic, in 2034, on the N6 either side of the junction with the R336 Tuam road will reduce very significantly once the N6 GCRR is constructed.

In the short term, there will be a slight increase in traffic on the R336 and R339 and the junction of the R336 Tuam Road with the N6. However, with the combination of the car reduction measures such as cycle lanes and bus lanes and as they become widely used, the volumes of traffic for the R336 and R339 generated from the proposed development will have a minimal effect on the overall traffic volumes. If the reduction in traffic on the N6 is reduced by the amount predicted by the proposed N6GCRR, this will result in a long term imperceptible cumulative impact on local traffic.

The provision of traffic signals at the junction of Joyce's Road and Tuam Road that include a pedestrian phase will have a long-term significant positive impact both on pedestrian safety and for right turning traffic.

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 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 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 no 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 development.

The impact of the proposed 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 4.7.2.

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.