

Data led housing needs assessment using detailed population projection methodologies and relevant supply side considerations to establish future housing demand.



GALWAY CITY

COUNTY GALWAY

HOUSING NEEDS ASSESSMENT


PREPARED BY
 **Future Analytics**
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1.0 INTRODUCTION

Future Analytics Consulting Ltd. (FAC) has prepared this assessment of Galway City's current housing profile, pipeline and future needs.

FAC is an urban planning consultancy that advocates an evidence-based approach to holistic planning and sustainable development and has contributed to the preparation of county strategies, regional plans and national outlooks involving data-led modelling of housing demands, socio-economic impact and demographic change.

As the 4th largest city in the country and the fastest growing city over the past 50 years, Galway plays a significant strategic role not just for the West, but also for the entire Northern and Western Regional Assembly (NWRA)¹.

Galway City's locational attraction and economic advantages give it a major part to play in the future development of Ireland's economy. Galway City benefits from having a unique demographic, economic and environmental profile which have each played a key part in its growth to date but are also key drivers of the challenges it now faces for the future.

To protect that position, an undersupply of housing which limits the attractiveness of the City as a place in which to live, as a base for industry and employment and in terms of its role supporting Ireland's economic engine, must be avoided.

This report has evaluated the City's future growth potential, its housing profile and future requirements and the following key findings have resulted:

- a) Galway City is set to grow significantly over the period to 2026 and beyond.
- b) Galway City has an upward trend towards 1- and 2-person households.
- c) Galway City is increasingly moving towards a renter dominated market (on an equal footing to owners).
- d) Galway City has a strong preference towards apartment-living (twice the national rate).
- e) Galway City's provision of housing needs to be significantly increased to keep pace with demographics.
- f) Galway City will need approx. ~800 units per annum and over 8,000 units by 2026.
- g) Galway City's person-household composition is changing. By 2026, 60% will be 1-& 2-person households.
- h) Galway City's planning and development pipeline has more than two-third of grants yet to commence and these are at risk of expiry by 2020 if not started.
- i) Galway City's pipeline will not be sufficient for the identified level of housing demand.
- j) Galway City only saw 500 units completed between 2014 and 2018.

¹ Comprising Counties Donegal, Sligo and Leitrim to the North-West, Counties Galway, Mayo and Roscommon to the West, and Counties Cavan and Monaghan mid-way along the Border with Northern Ireland (National Planning Framework 2018).

2.0 POPULATION GROWTH IN GALWAY CITY

2.1 RECENT POPULATION GROWTH

Population growth in Galway City in the 25 years to 2016 has been substantial; increasing by 54.7% to 78,668 people (Table 1)². As the country's 4th largest city, growth would be expected, but the level of growth contrasts with the overall level of change nationally, which increased by a comparatively lower 35.1%.³

These rates demonstrate the inherent growth dynamic at play within Galway City and its role as a strategic driver for the Western economy. With significant pressure being placed on the Dublin housing market since the 1990s, cities like Galway have been perceived as an affordable and accessible alternative to living in Dublin and indeed offer a myriad draws and opportunities unique to their location and social footprint.

Table 1: Population Growth in Galway City 1991-2016 as compared to the State

	1991 (Census)	1996 (Census)	2002 (Census)	2006 (Census)	2011 (Census)	2016 (Census)	Ch '91 - '16
State	3,525,719	3,626,087	3,917,203	4,239,848	4,588,252	4,761,865	-
State Change	-	100,368	291,116	322,645	348,404	173,613	1,236,146
State Change (%)	-	2.8%	8.0%	8.2%	8.2%	3.8%	35.1%
Galway City	50,853	57,241	65,832	72,414	75,529	78,668	-
Galway City Change	-	6,388	8,591	6,582	3,115	3,139	27,815
Galway City Change (%)	-	12.6%	15.0%	10.0%	4.3%	4.2%	54.7%

Galway City experienced most of its growth between 1996 and 2006, stabilising thereafter and maintaining a rate slightly higher than the state average (Figure 2.1).

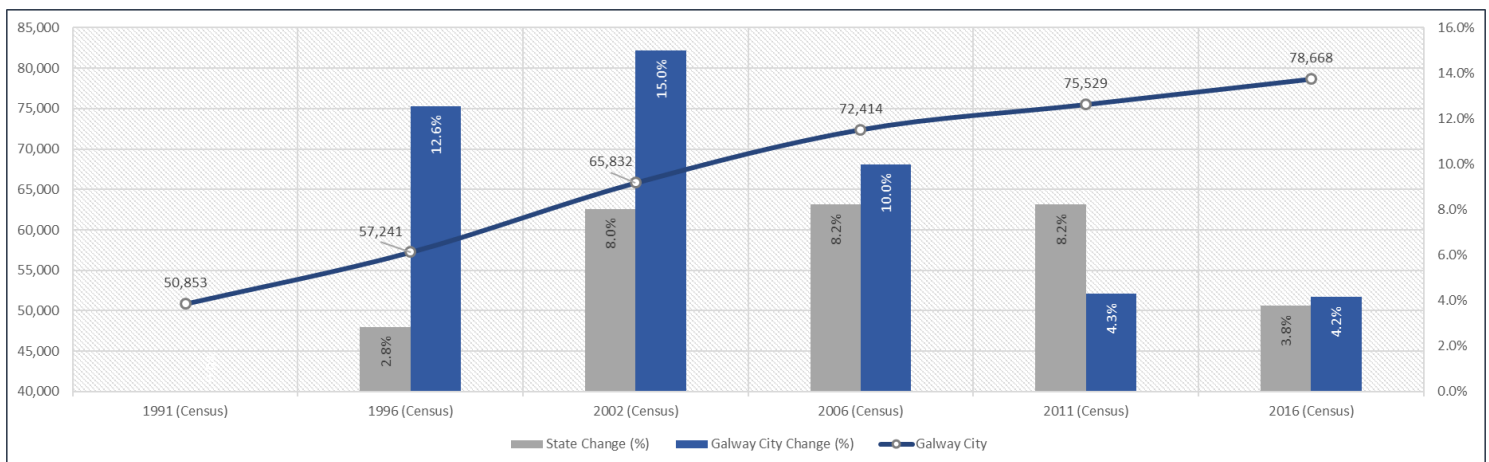


Figure 2.1: Population Growth in Galway City 1991-2016 as compared to the State

² CSO de facto population, various years, includes all people present on census night vs. only resident population.

³ Ibid.

2.2 PROJECTED POPULATION GROWTH

Galway has been Ireland's most rapidly developing urban area for the past 50 years⁴ and through the National Planning Framework (NPF), the NWRA has set out ambitious growth targets in its draft Regional Spatial and Economic Strategy (RSES) which seek to reinforce the spatial and economic relevance of the City for the region. Though the targets represent an intended goal for future growth, they have been influenced by policy driven spatial allocation and assumption. The reality of growth, particularly its distribution and volume are ostensibly more dynamic and reflective to both economic and societal factors over planning objectives.

Therefore, in order to provide contrast to these targets, FAC has put forward a robust and credible evidence-led projection of population in this document which is not influenced by such policy measures. Rather the component influences driving natural population growth and particularly inter-regional migration have been considered. In other words, a demographically-led projection of population indicating the likely growth pattern for Galway City over the next twelve years to 2031.

FAC uses the *demographic cohort component method* or CCM as it is known in practice by the Central Statistics Offices (CSO) and other international agencies for the production of population projections. CCM provides a flexible and powerful approach to population projection by developing an array of comparative scenarios, each tailored around the application of qualified assumptions in mortality, fertility and migration.

For the purposes of this research we have considered migratory alignment with the CSO's own assumptions. A scenario entitled 'M1F1-aRAAdj' has been utilised herein⁵.

- **Using CCM, the population of Galway City is projected to reach approximately 90,660 people in the ten years to 2026; a 15.3% increase on 2016. In contrast, the NPF draft NWRA-RSES is targeted a population of 97,870 people or a 24.4% increase.**
- **By 2031, the City will grow further under CCM to 95,160 people, a 21% increase on 2016, whereas under the NPF basis the City will grow to over 106,670 people, or a 35.6% increase. These growth rates are compared alongside the state in Table 2 and Figure 2.2 overleaf.**

The level of growth being set out under the NPF targets assumes a significant volume of inter-regional net migration benefiting Galway and the West, largely from the Eastern and Midlands Regional Assembly (EMRA). This is a very clear policy-driven assumption by Government in underpinning the NPF and how both the NWRA and the SRA (Southern Regional Assembly) will both grow on a 50:50 ratio with the EMRA⁶. However, this would require a reversal to the pattern of growth within the EMRA exhibited over the last 100 years, and the neither the NPF nor the draft NWRA RSES outlines how this might be achieved immediately in order to reach the 2026 target. To that end, FAC's use of the CCM projection offers a more robust and credible foundation for modelling anticipated population growth into the region and the City. In assessing the recent pattern of inter-regional migration, particularly towards the west (which has exhibited a net outflow in recent years) FAC believe the NPF assumptions are comparatively optimistic and may exaggerate the achievable level of growth over the short term to 2026 especially.

Therefore, between 12,000 (CCM) and 19,200 (NPF) additional people are set to call Galway City home by 2026. Accommodating this increase in population will present certain challenges for the City's existing infrastructure, not least of which the provision of housing. Chapter 4 will examine the impact of the CCM projection in terms of housing requirements, particularly on foot of compositional changes in person household size.

⁴ Draft Northern and Western Regional Assembly (NWRA) Regional Spatial & Economic Strategy (RSES)

⁵ Comprised of a 'Migration Option 1, Fertility Option 1' informed by recent sub-regional migration data as of 2018.

⁶ NPF Implementation Roadmap, 2018, DoHP&LG

Table 2: Population Growth in Galway City and State 1991-2016 and Projected Population to 2031 (CCM and NPF)

	1991	1996	2002	2006	2011	2016	2021	2026	2031
State	(Census) 3,525,719	(Census) 3,626,087	(Census) 3,917,203	(Census) 4,239,848	(Census) 4,588,252	(Census) 4,761,865	(Projected) 5,023,041	(Projected) 5,305,720	(Projected) 5,589,114
State Change (#)		100,368	291,116	322,645	348,404	173,613	261,176	282,679	283,393
State Change (%)		2.8%	8.0%	8.2%	8.2%	3.8%	5.5%	5.6%	5.3%
Galway City Actual	50,853	57,241	65,832	72,414	75,529	78,668			
Galway City Change (#)		6,388	8,591	6,582	3,115	3,139			
Galway City Change (%)		12.6%	15.0%	10.0%	4.3%	4.2%			
Galway City CCM						78,668	85,314	90,667	95,162
Change CCM-Actual (#)						3,139	6,646	5,353	4,495
Change CCM-Actual (%)							8.4%	6.3%	5.0%
Galway City NPF						78,668	88,268	97,868	106,668
Change NPF-Actual (#)						3,139	9,600	9,600	8,800
Change NPF-Actual (%)							12.2%	10.9%	9.0%

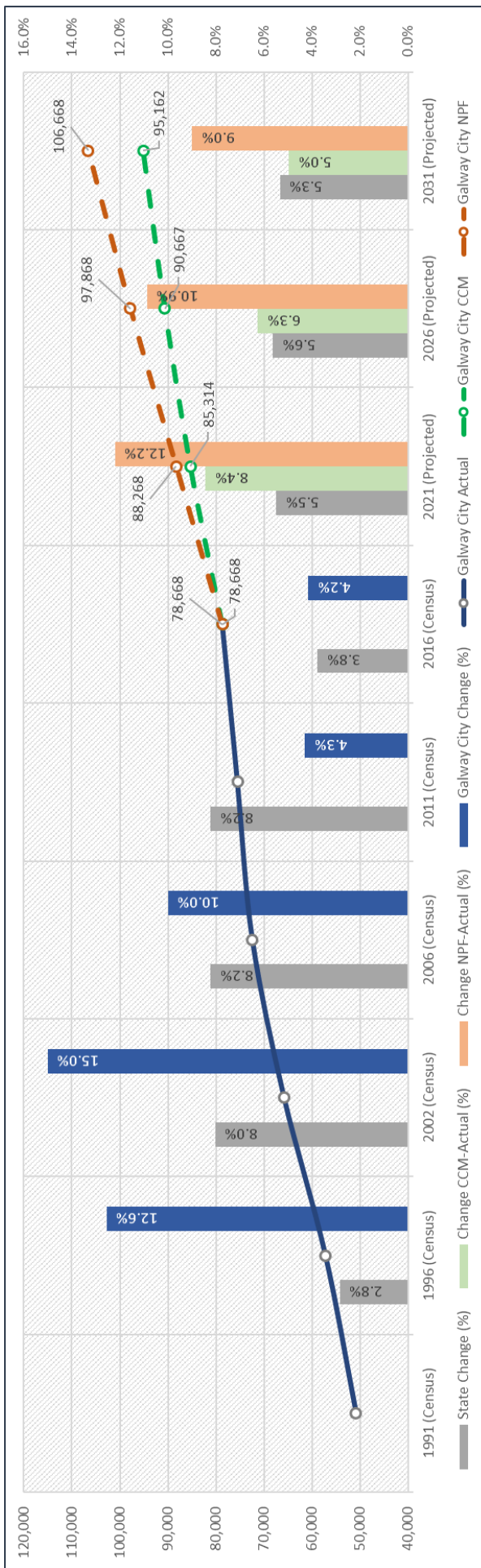


Figure 2.2: Population Growth in Galway City and State 1991-2016 and Projected Population to 2031 (CCM and NPF)

3.0 PROFILE OF HOUSEHOLDS IN GALWAY CITY

3.1 HOUSEHOLDS AND HOUSEHOLD SIZES

In 2016 Galway City was home to 74,376 residents and 28,859 private households. That equates to an average size of 2.57 persons per household, a slight increase on 2011's 2.56 average household size (AHS). However, this was very much in line with the national trend which also saw an increase over the period from 2.73 to 2.75. In the past few decades AHS has been falling steadily across Ireland, as it has in other western countries. The slight increase in 2016 is illustrative of a greater number of people staying at home with their parents or friends instead of forming households of their own. This is reflective of various housing supply, affordability and overall economic constraints in recent years.

In 2016, 1- and 2-person households comprise 56% of Galway City's total households, as seen below.

Table 3: No. of People and Households in Galway City by Household Size in 2016

	HH	Persons	HH %	Persons %
1 person	7,412	7,412	25%	10%
2 persons	8,932	17,864	31%	24%
3 persons	5,642	16,926	19%	22%
4 persons	4,426	17,704	15%	23%
5+ persons	2,862	15,754	10%	21%
Total Private HHS	29,274	75,660	100%	100%

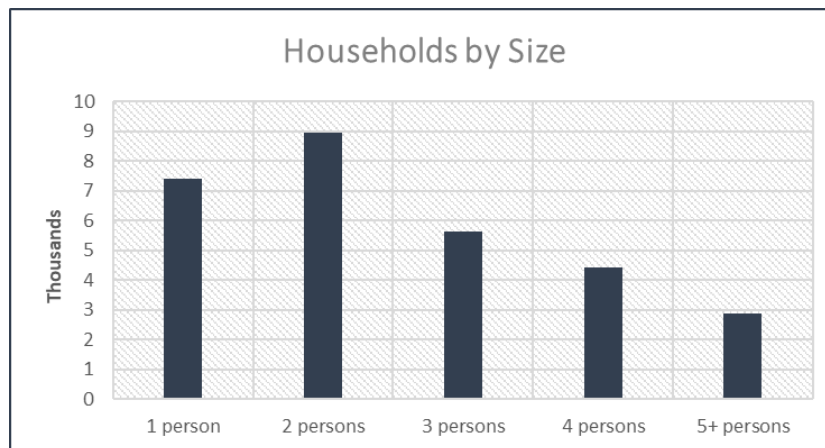


Figure 3.1: No. of Households in Galway City by Household Size in 2016

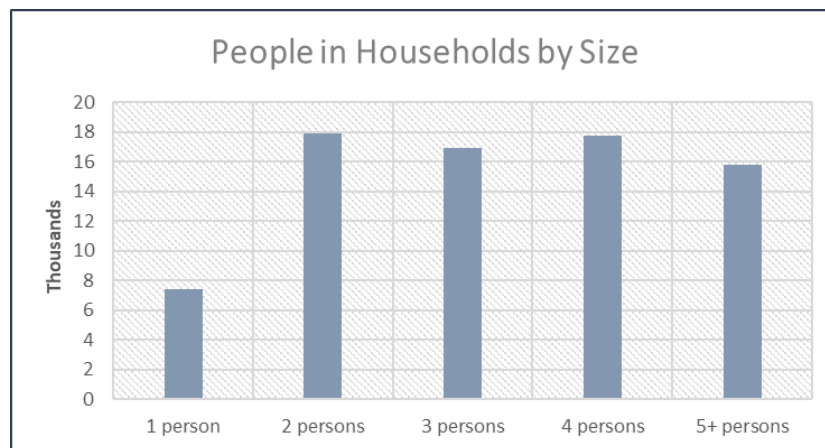


Figure 3.2: No. of People in Households in Galway City by Household Size in 2016

3.2 COMPOSITIONAL CHANGES

Galway City's household composition was very different in 2002, with 1- and 2-person households accounting for 48% of total households (instead of 56% in 2016); AHS was much higher too at 2.86. Since then, both 1- and 2-person households have increased their share of total households by 4% in each bracket respectively.

FAC research undertaken on behalf of the Housing Agency⁷ in this area has indicated that Galway City exhibits a noted trend towards decreasing household sizes.

Table 4 summarises an assessment of inter-censal data from 2002 to 2016 which indicates that there is an established trend towards the growth of 2-, 1- and 3-person household sizes (in that order) at the expense of 4- and predominantly 5+ person households.

Table 4: Trended Annualised Compositional Change in Household Sizes in Galway City 2002-2016

Household Size	1p HH	2p HH	3p HH	4p HH	5p+ HH
Trended Change P.A.	0.18%	0.34%	0.14%	-0.05%	-0.52%

This growth has unsurprisingly placed added pressure on the capacity of Galway City's existing stock to support fewer and fewer people each year. Indeed, as this trend continues, the preferential choices of current and future resident households in deciding to form smaller groups must inform the type of future housing provision.

The natural question stemming from this identified increasing preference for 1- and 2-person households is what type of unit should be built to meet these requirements?

In reflecting on that, one should also consider some additional factors which relate to what the most suitable unit-type might be. Namely, the changing nature of household tenure, unit type preference and affordability.

3.3 CHANGES IN TENURE

The nature of occupancy tends to fluctuate based largely upon social norms and economic factors enabling households to pursue the preferred occupancy types. Since 2002 as the number of households in Galway City rose by nearly 40%, social and private rental-occupancy has increased by a significant 70%-76% respectively. In comparison owner-occupancy has risen by just over 12% (Table 5).

Part of this significant difference in growth is attributable to Galway City's unique demographic composition on foot of the higher education offering, however, it is also indicative of the similar levels of growth in private rental across all of Ireland's urban areas, especially within the cities.

⁷ *Housing Supply Requirements in Ireland's Urban Settlements 2014–2018*, Housing Agency, 2014 (and later)

Table 5: Household Occupancy in Galway City 2002-2016 and period change

Galway City	2002	2006	2011	2016	Ch. '02-'16
Owned HHs	11,983	13,128	13,520	13,465	12.4%
Private Rented HHs	5,826	6,311	10,390	10,241	75.8%
Social Rented HHs	1,969	4,496	2,997	3,350	70.1%
Other HHs	1,241	1,389	790	1,771	42.7%
Total Private HHs	21,019	25,324	27,697	28,827	37.1%

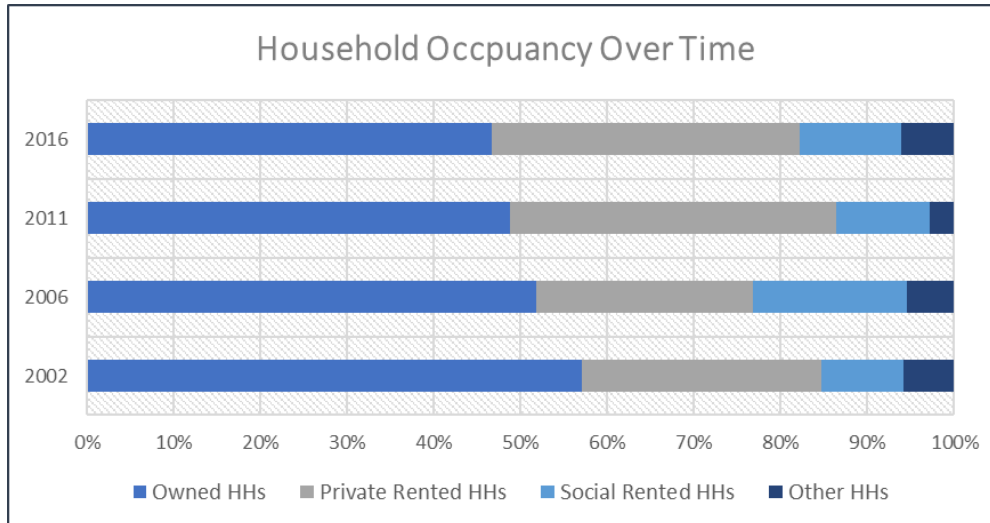


Figure 3.3: Household Occupancy in Galway City 2002-2016 and period change

This continued upward trend in rental occupancy has placed Galway City far ahead of the national rate of 30% renting, with almost equal footing now between rental and owner-occupancy in the City; each comprising 47% of total households (including social renting). Indeed, the number of people who have entered the private rental sector in Galway City since 2002 almost matches the total level of growth in the City (Table 6).

Table 6: Household Occupancy in Galway City 2002-2016 and period change

Galway City	Persons Renting	Households Renting	Total Population	Total HH	HH%	PP %
2002	15,834	5,826	60,112	21,019	28%	26%
2006	17,033	6,311	67,572	25,324	25%	25%
2011	26,466	10,390	70,805	27,697	38%	37%
2016	27,394	10,241	74,275	28,827	36%	37%

This indicates that the overarching change towards renting is not just a symptom of Galway's university influence but is reflective of the same trends playing out at national level where people are continuing to rent much longer into their lifecycles (as seen in Figure 3.4's dark blue).

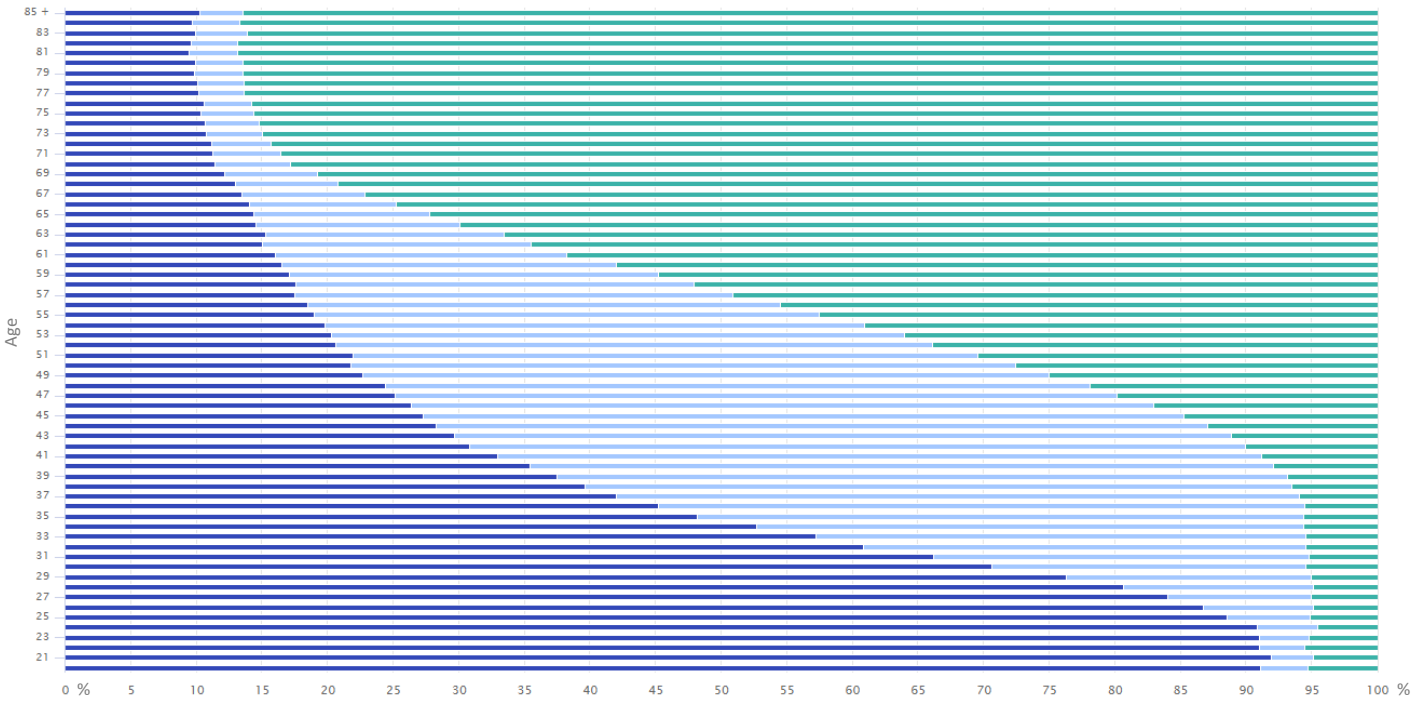


Figure 3.4: Tenure status by age of householder in 2016 at State level (Source: Central Statistics Office, 2018)

The distribution of Galway City's private renters is such that renters aged between 30 to 44 comprise almost half of all private renting households (48%). This illustrates a very mature segment of the total population is opting to rent instead of buy, and this naturally shapes the type of unit options this cohort occupy and will continue to seek (Table 7).

Table 7: Age Composition of Private Renting Households in Galway City in 2016 (age of head of household)

House-holds	Under 25	25 - 29 years	30 - 34 years	35 - 39 years	40 - 44 years	45 - 49 years	50 - 54 years	55 - 59 years	60 - 64 years	65 years plus
10241	1,996	1,916	2,204	1,750	945	570	361	223	128	148
100%	19%	19%	22%	17%	9%	6%	4%	2%	1%	1%

3.4 APARTMENTS OVER HOUSES

An increasing number of households in 2016 are renting and correspondingly renting in apartments. Indeed, the proportion of people living in apartments is increasing year on year with nearly 24% of people in Galway City now considered apartment dwellers (Table 8). This is almost double what it is nationally (12% of households) and nearly a 7% increase on 2002's rate of 17%. Part of that is due to the composition of stock built in the last 20 years, greater affordability and individual preference.

Table 8: Type of Dwelling by Households in Galway City in 2016

Type of accommodation	Households	Persons	HH %
House/Bungalow	21,341	58,676	73.9%
Flat/Apartment	6,824	13,968	23.6%
Bed-sit	65	91	0.2%
Caravan/Mobile Home	32	101	0.1%
Not stated	597	1,540	2.1%
Total	28,859	74,376	100%

4.0 MINIMUM HOUSING REQUIREMENT FOR GALWAY CITY

4.1 APPROACH

The interplay between demographic change and future housing requirements consist of many individual factors such as the drivers of population change, settlement patterns, migratory flows, changing household composition and the supply of housing.



Min. Housing Reqs.

- Population Projection
- Intercensal Trends
- Vacancy Rates
- Household Composition
- Housing Stock
- Obsolescence

FAC has developed a statistical model to project a settlement's future minimum housing requirements (MHR) as a product of evaluating the impact of its changing demographics, stock characteristics and trends in household composition. The model has been validated previously by the Department of Housing, Planning and Local Government as part of FAC's research on behalf of the Housing Agency.

This model provides a mechanism through which anticipated gaps in the provision of sufficient housing stock to cater to the increasing needs of a growing population can be highlighted. It has been used to ascertain what challenges face Galway City's development should it grow in accordance with the CCM population projection.

As the population changes, the utilisation of existing stock also changes – in line with increases and decreases in person-household size. In this research Galway City's future population is distributed proportionally in line with its characteristic profile (its projected occupancy pattern), and the resulting quantum of homes required can be determined against existing stock.

As the population increases, there will be a significant impact on the utilisation of existing housing stock and this will give rise, in many places, to a deficit, should supply lag behind. A key component of the Minimum Requirements Model is the application of the CCM population projections which are used to assess how each Galway City will undergo shifts in its age profile and how people coming into the City, as well as leaving it, will impact on its rate of change and household formation.

4.2 FINDINGS

Galway City's population growth, and specifically its trended changes in household composition, will result in **a minimum requirement to deliver at least 8,160 residential units by 2026; or an average of 816 units per annum**. Similarly, if supply is not forthcoming, at least 11,927 residential units will be required by 2031.

This is a considerable requirement, equivalent to an approximate 24.3% increase on the existing housing stock of 33,522 (excluding Holiday homes) identified in the 2016 census. The annual and cumulative minimum housing requirement for the years 2017–2031 are detailed in Table 9 overleaf.

If the NPF draft NWRA-RSES targets had of been assessed, this requirement would have been much higher than is shown.

It's important to note that this minimum requirement forecasts the **'internally generated'** demand for housing within Galway City but does not evaluate requirements based on certain external drivers, like proximity to Limerick, Cork or Dublin, house price, type or supply, or a preference to live in Galway. Each of these can impact/augment this requirement and a further assessment should be undertaken.

Table 9: Identified Minimum Housing Requirements (Units) in Galway City to 2026 and 2031

MHR	2017 MHR	2018 MHR	2019 MHR	2020 MHR	2021 MHR	2022 MHR	2023 MHR	2024 MHR
Cumulative	-965	-1,735	-2,523	-3,324	-4,138	-4,953	-5,764	-6,569
Annualised	-965	-770	-788	-801	-814	-815	-811	-805
MHR ctd.	2025 MHR	2026 MHR	2027 MHR	2028 MHR	2029 MHR	2030 MHR	2031 MHR	
Cumulative	-7,367	-8,160	-8,947	-9,719	-10,475	-11,211	-11,927	
Annualised	-798	-794	-787	-772	-756	-736	-716	

The MHR methodology assumes that the housing requirement for each year has been met. Therefore, when the requirement for a given year is not met (i.e. supply falls short), it must be delivered in a subsequent year.

Added to this, the methodology does not account for any pent-up housing requirement that exists in the settlement prior to 2017 – i.e. housing requirement that has not been met in the years up to 2017.

In this case of Galway City, the pent-up or unmet requirements are considerable. Newly released data from the CSO indicates that only 500 units were completed in Galway City in the years from 2014 up to 2018⁸. This is far below even the annualised minimum requirements in Table 9, above.

Furthermore, unlike the application of average household size to new population, MHR evaluates growth year on year with respect to the changing composition of households. This allows for specific pressures in key person-household sizes to be identified.

Table 10 and Figures 4.1 and 4.2 below look at the relative change in the projected number of future households by 2026 as well as their disaggregation by person-household size (recall, as informed by Galway City's own inter-censal trends 2002-2016).

Table 10: Projected Changes in the no. of Households per Person-Household Size by 2026

	2016 HH	2026 HH	CH '16-'26	CH '16-'26
All private households (HHs)	28,859	37,746	8,887	30.8%
1-person HHs	7,354	10,508	3,154	42.9%
2-person HHs	8,823	12,208	3,385	38.4%
3-person HHs	5,554	7,132	1,578	28.4%
4-person HHs	4,346	5,139	793	18.2%
5plus-person HHs	2,782	2,758	-24	-0.9%

⁸ New Dwelling Completions 2018 Q4, CSO, 2019

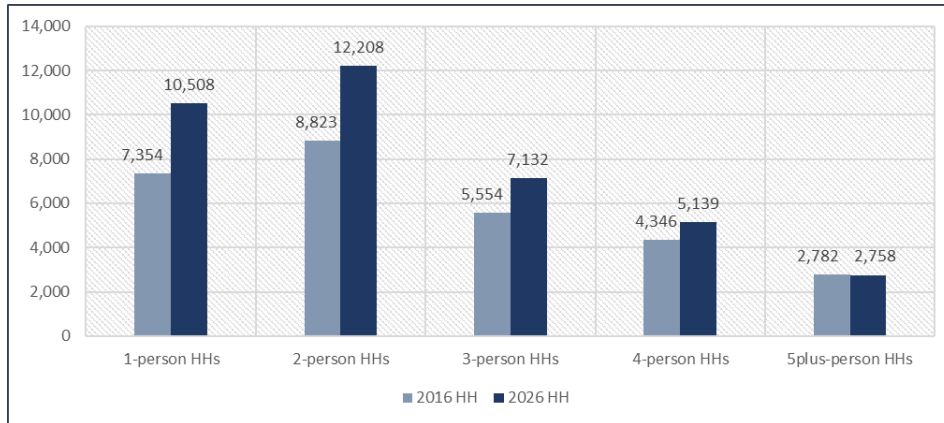


Figure 4.1: Projected Changes (absolute) in the no. of Households per Person-Household Size by 2026

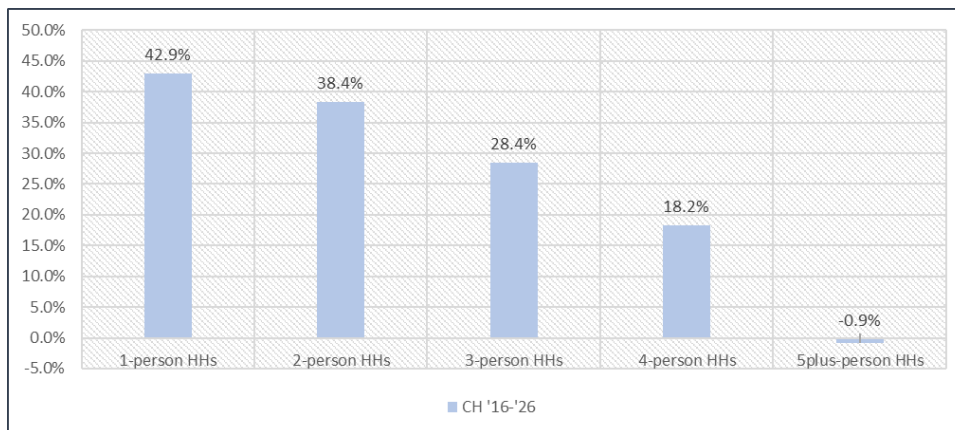


Figure 4.2: Projected Change (percentage) in the no. of Households per Person-Household Size by 2026

These findings indicate that **there will be a significant increase in the number of 1- and 2-person households by 2026**, and that after current stock (post-obsolescence) and even current pipeline is factored in, **a future deficit in the sufficient provision of residential units will exist**.

It should be noted that the estimation of minimum housing requirements does not account for extraneous demand factors, such as a specific preference to live in Galway City over other areas. As MHR factors in a projection of population (which incorporates assumptions on migration), preference is not directly handled (migration is a consequence of many factors which are assessed in proxy by examining the migration trends only). MHR is therefore not a demand-side tool, but rather a demographic-impact and assessment tool.

Population over and above what has been projected to reside in Galway City would add to the requirements and would likely induce further inward migration, thereby further increasing the minimum requirement.

Such demand may be defined by factors such as personal preference/circumstances (choices, finances, etc.) or by planning policy, such as under the NPF. Consequently, the concept of 'requirement' should be acknowledged as being distinctly different to housing 'demand' – i.e. it is a need for housing rather than an effective or latent demand for same.

A good indicator of whether the above requirements can be met is the pipeline of current development and planning activity. Chapter 6 examines this with a view of breaking down the available statistics with regards to the distribution of units by type and application status.

5.0 RESIDENTIAL DEVELOPMENT IN GALWAY CITY

5.1 PIPELINE OF PLANNING ACTIVITY

An analysis of residential applications as of January 2019 reveals that there are currently 127 applications for schemes of 10 units or greater in Galway City’s planning and development pipeline. This accounts for applications with decisions pending, under appeal, those granted permission and those with construction commenced (but incomplete).

Figure 5.1 below provides a disaggregation of these applications by the number of units and their status. There are 3,271 units in total; of which 2,428 have received granted permissions (74.2%).

Table 11: No. of units by application status (as of January 2019)

Galway City:	Granted (not comm.)	Commenced	Conditional	Appealed	RFI	Awaiting Update	Refused	Incomplete / Invalid	Withdrawn	Grand Total
#	1625	803	51	34	342	22	68	72	254	3271
%	50%	25%	2%	1%	10%	1%	2%	2%	8%	100%

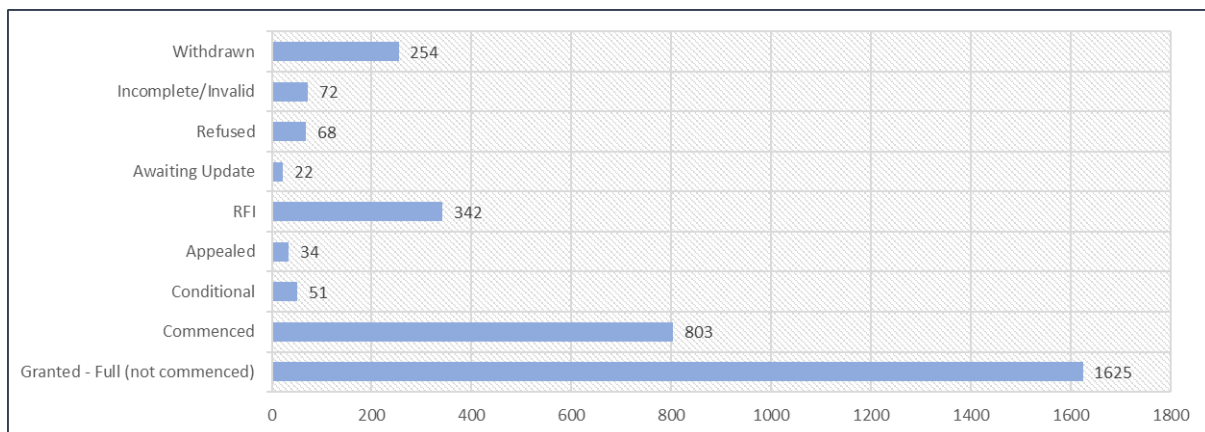


Figure 5.1: No. of units by application status in Galway City’s planning and development pipeline (as of January 2019)

The distribution of this activity for granted applications (numbering 94 schemes) is not uniform between build types, with just under 50% of applications being mixed development in nature, nearly 36% being for houses and fewer than 17% building apartments (Figure 5.2).

Table 12: No. of units granted & commenced by construction type (as of January 2019)

Galway City:	Houses	Apartments	Mixed Dev.	Grand Total
#	867	407	1154	2428
%	36%	17%	48%	100%

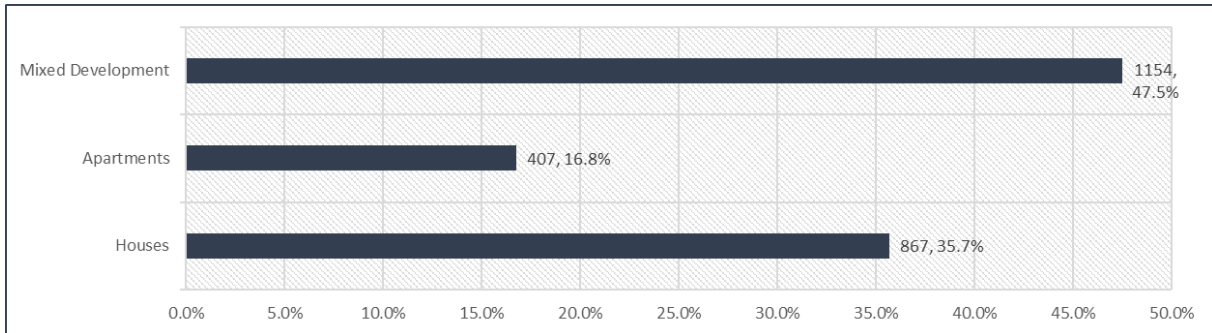


Figure 5.2: No. of units granted & commenced by construction type (as of January 2019)

Just under 25% of total units applied for have been commenced or 33% of granted permissions. Of these 803 units, the majority are houses and mixed development builds (45% and 44% respectively), with apartments accounting for just 83 units or less than 11% (Figure 5.3).

Table 13: No. of units commenced by construction type (as of January 2019)

Galway City:	Houses	Apartments	Mixed Dev.	Grand Total
#	366	86	351	803
%	46%	11%	44%	100%

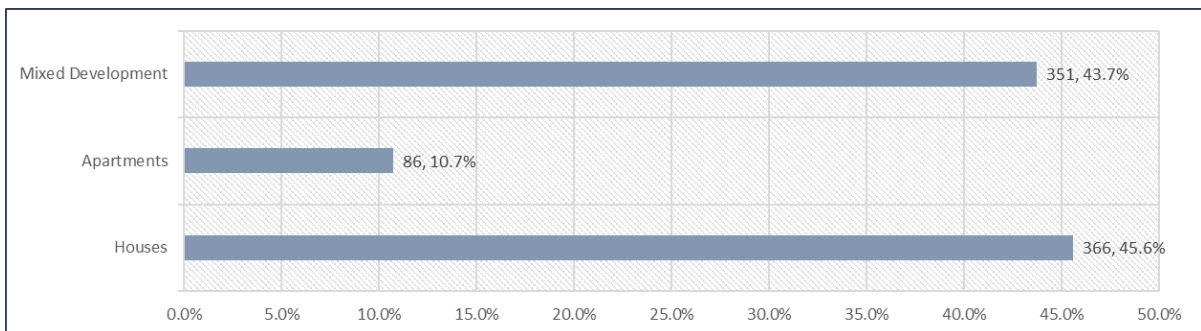


Figure 5.3: No. of units commenced by construction (as of January 2019)

The spatial location of the development pipeline for granted residential applications is concentrated in suburban parts of Galway City (Figure 5.4). Areas such as Knocknacarra and Ballybaan account for the majority (>90%) of all current consents in the city. These areas offer a greater potential to accommodate larger scale developments when compared to more central city locations, and the pipeline indicates a readiness to develop at these locations.

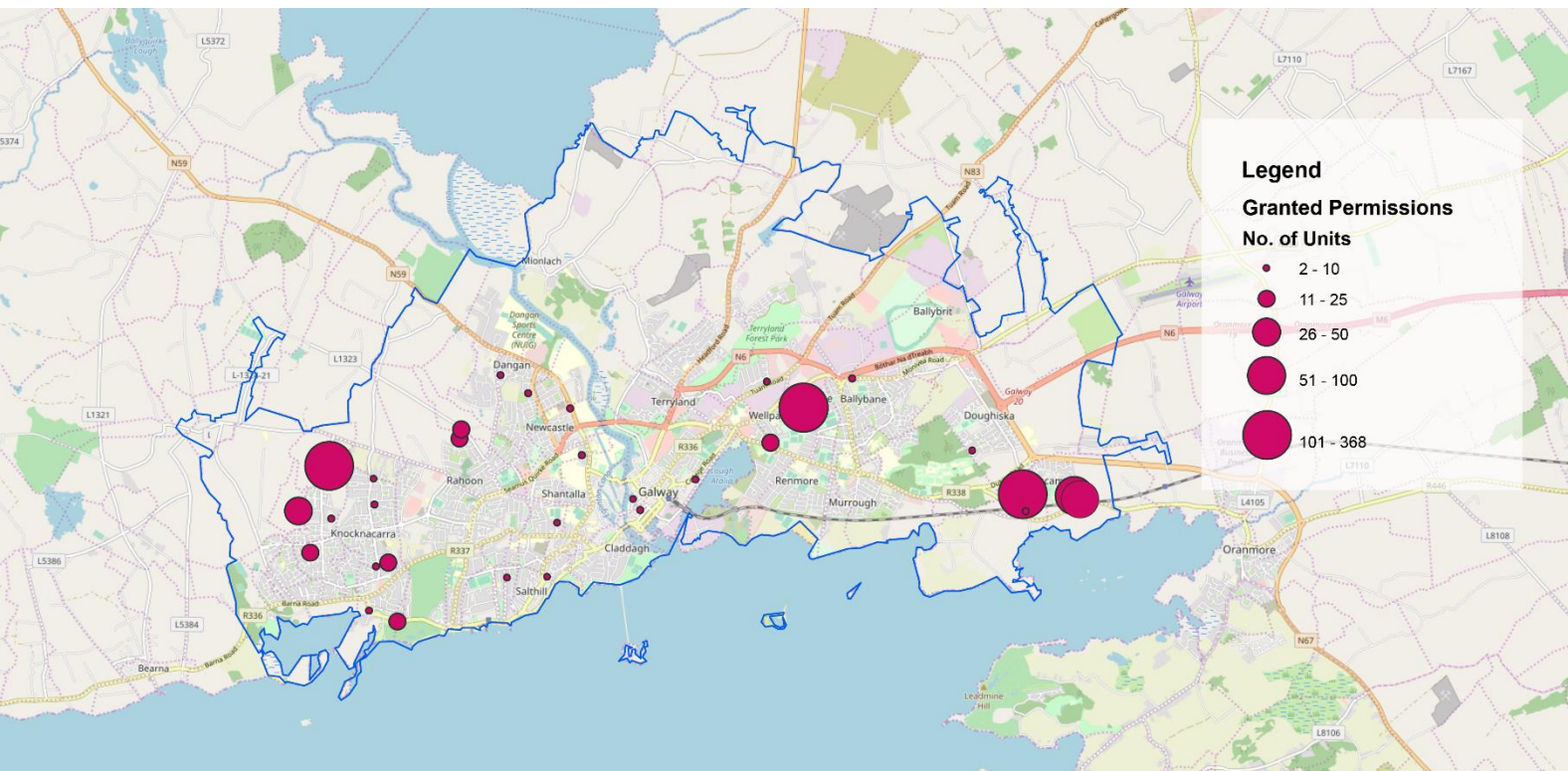


Figure 5.4: No. of units granted by location

5.2 IDENTIFIED DELIVERY CONCERNS

It is not anticipated that all of the residential applications will be granted planning permission, nor will each reach completion on the basis that some schemes may be speculative in nature, whilst others may be impacted by other issues such as financing or viability.

It has been observed that approximately 67% of granted applications which have not yet commenced will have their permissions expire by 2020. These applications account for 1,092 of the 1,625 units granted in Galway City's uncommenced pipeline.

Should these schemes fail to commence construction in the coming months their delivery before their planning permission is due to expire is doubtful. This could put at risk the provision of housing in the short term for Galway City.

6.0 HOUSING AFFORDABILITY

6.1 APPROACH

Affordability is an essential ingredient in any housing market, allowing households the choice between either renting in the short, medium or long term or becoming home owners. There are a number of factors which determine affordability a household but ultimately it is likely to be about their capacity to afford the rent/mortgage for a property type in a location of their choice and which suits their circumstances.

Quantifying the levels of affordability within the Galway City housing market requires an examination of relationship between house purchase price or rental price and that of household income. This section provides a summary assessment of both housing and rent affordability on the basis that there exists a well-recognised set of assumptions around what affordability means and how it can be quantified.

The key measures of affordability utilised in this study are:

1. *Price to income ratio (PIR)*

The traditional approach to PIR indicates a person who needs accommodation, and whose income would be adequate to meet the payments on a mortgage for the purchase of a house to meet his or her accommodation needs. These payments calculated over the course of a year would not exceed 35/40 per cent of that person's annual income net of income tax and pay related social insurance. If the monthly cost of servicing a mortgage (for a given house price) is greater than this percentage household would be deemed ineligible (i.e Annuity Method).

In parallel to the Annuity method are the Central Bank of Ireland (CBI) regulations introduced in 2015 placing additional stipulations on access to credit. Specifically, that an upper limit of 3.5 times a household's gross income can be applied for by an applicant against the cost of the property. Accounting for an assumed down payment a household can typically afford to buy a property 4 times its household income. In practice, the CBI rules are more restrictive than annuity and thus the study uses the CBI rules as a benchmark for affordability.

2. *Proportion of household income required to rent a home (RIR)*

The ability to pay rent is a function of income and thus one simple measure of affordability is the ratio of rent to gross income. However, using net income to measure affordability is a more precise indicator of affordability (i.e. disposable income).

It is generally accepted that if housing costs exceed 40 per cent of a household's disposable income, the household is experiencing housing stress. That is, housing is unaffordable and housing costs consume a disproportionately high amount of household income. Households paying close to 40 per cent or more of their income on rent are generally seen to be in housing stress. Under those circumstances the cost of housing is affecting a household's ability to pay for other primary needs such as Food, Power and water, Health services and medication, Household goods (such as cars, washing machines, fridges, computers).

6.2 KEY INDICATORS

The average house price transaction in Galway was **€246,223 in 2018 based on 2,438 transactions**. Prices have increased by 6.7% from €230,685 in 2010 to €246,223 in 2018. The volume in € millions of property transactions has increased significantly since 2011, with a significant value increase in 2018. Since 2015, the levels of price growth have been marginally greater than the national average, but the levels of transaction activity was the 3rd highest in the country at 10,706 over the period. DAFT reporting indicates that in Q3 2018 the average listing price of a 1-bedroom unit was €125,000 in the city. This figure increases to €160,000 for a 2-bedroom unit, €237,000 for a 3-bedroom unit and €384,000 for a 4-bedroom unit.

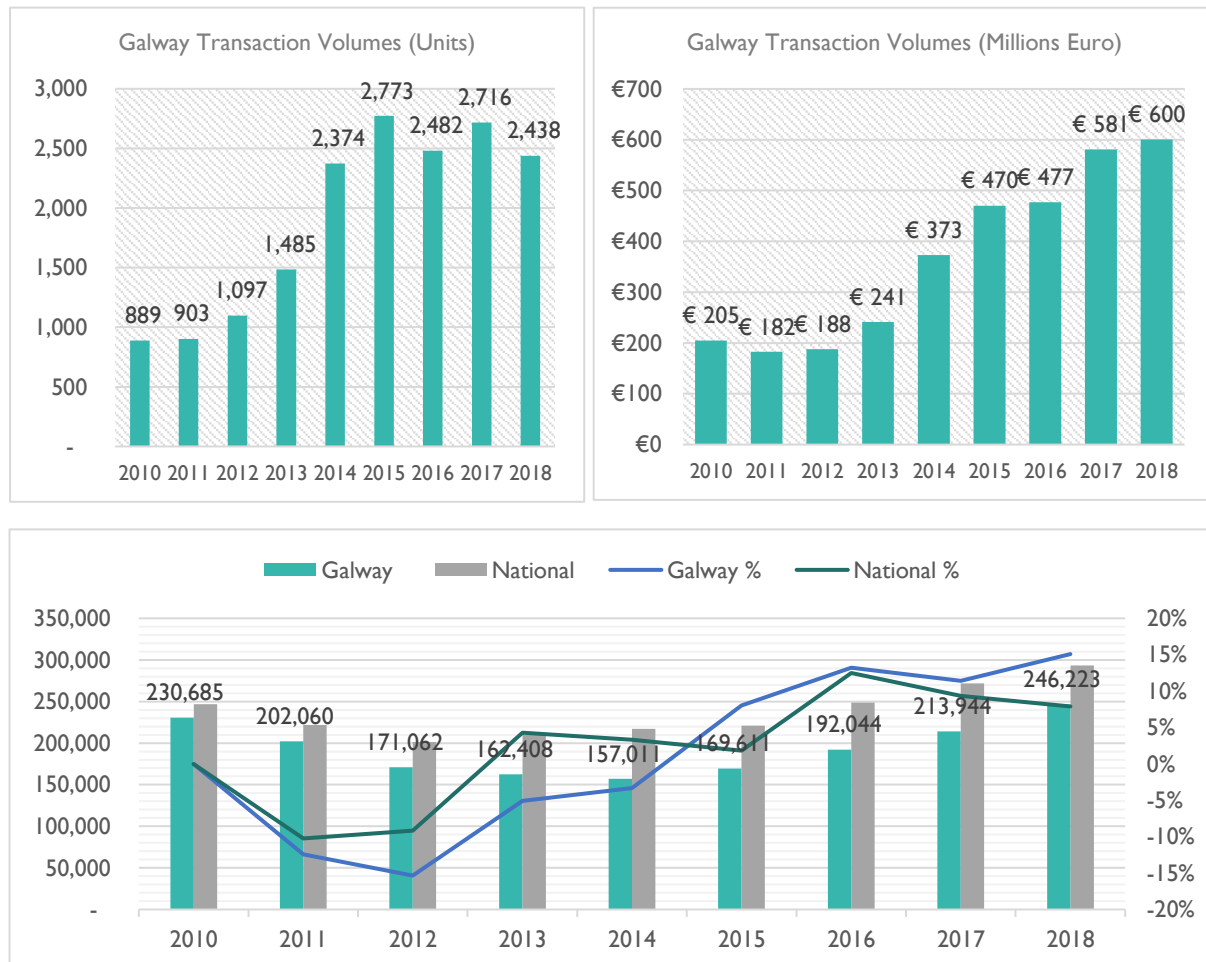


Figure 6.1: Level of Transaction activity for residential units and average house prices.

In Galway City, existing and market rents⁹ have remained very correlated since 2007 indicating supply and demand balance has been relatively aligned and rents have risen and fallen without any major oversupply or shortages in stock. That said, the existing average rent in Galway City (for all home types) has increased 19% since 2015 but the average change in market rents shows a 45% increase between 2015 and 2018 alone.

⁹ There are 2 primary sources for rent data in Ireland, the Private Rental Tenancies Board (PRTB) and DAFT.ie. PRTB data is not market data and includes all existing rental agreements. For this reason, it will always be below what is advertised on the DAFT 'market' rate. It is important to assess both in the context of understanding rent change.

The pace of growth in ‘market’ rent vs ‘existing’ rents can be seen more clearly in recent years in the diagram below.

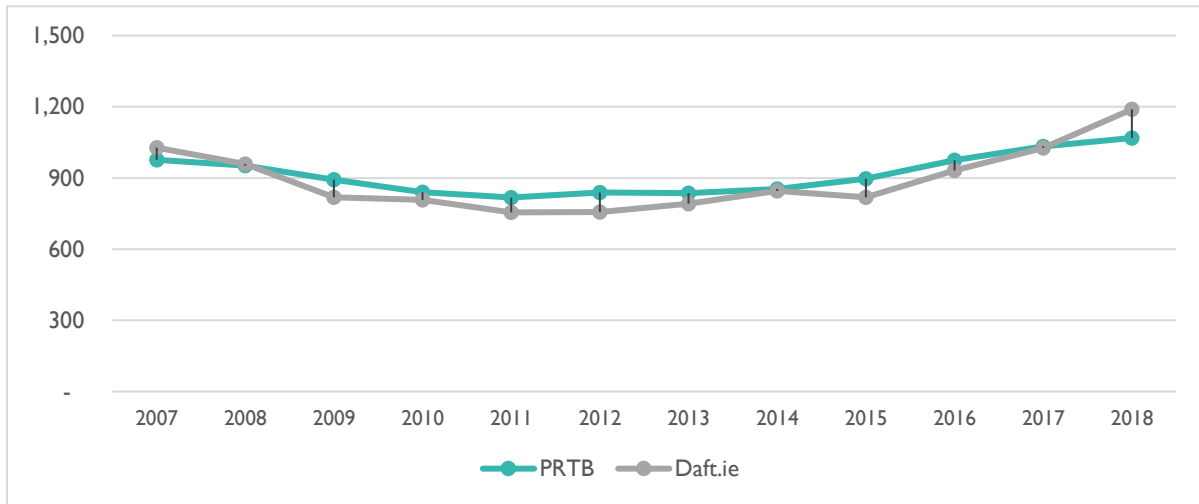


Figure 6.2: Rent Price changes (existing and market) in Galway City since 2007.

PRTB data indicate a growth in existing lease arrangements of 9.5% since 2007. The largest increase in price has been in two-bed unit types which have experienced an 13.7% growth since 2007.

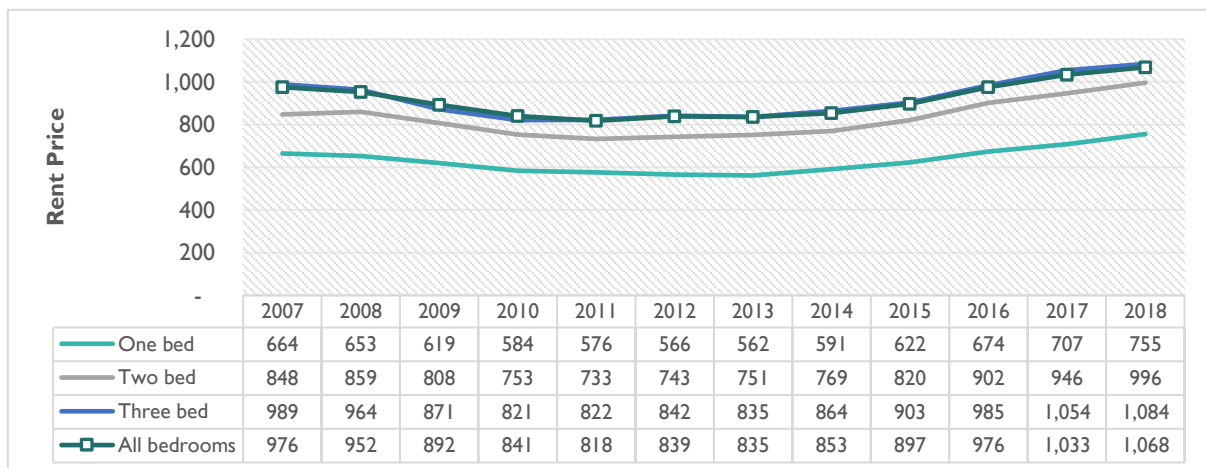


Figure 6.3: Rent Price changes (existing) in Galway City per unit type.

Household income estimates in Galway have been derived from the CSO Household Budget Survey (2016). The HBS is a household survey and defines a household as a single person or group of people who regularly reside together in the same accommodation and who share the same catering arrangements. Household members are not necessarily related by blood or by marriage. This resource provides a snapshot of household budgets, which have been adjusted for county-level analysis for this study.

The HBS provides data for ten gross household income decile groups which are ten equal-sized groups of households, each group containing 10% of households. The first decile group contains 10% of households with the lowest gross household income; the second decile group contains 10% of households with the next lowest gross household income etc. The tenth decile group contains 10% of households with the highest gross household income. The annual gross income figures provided below (Figure 6.4) are based on the upper limit of the income bands for Galway.

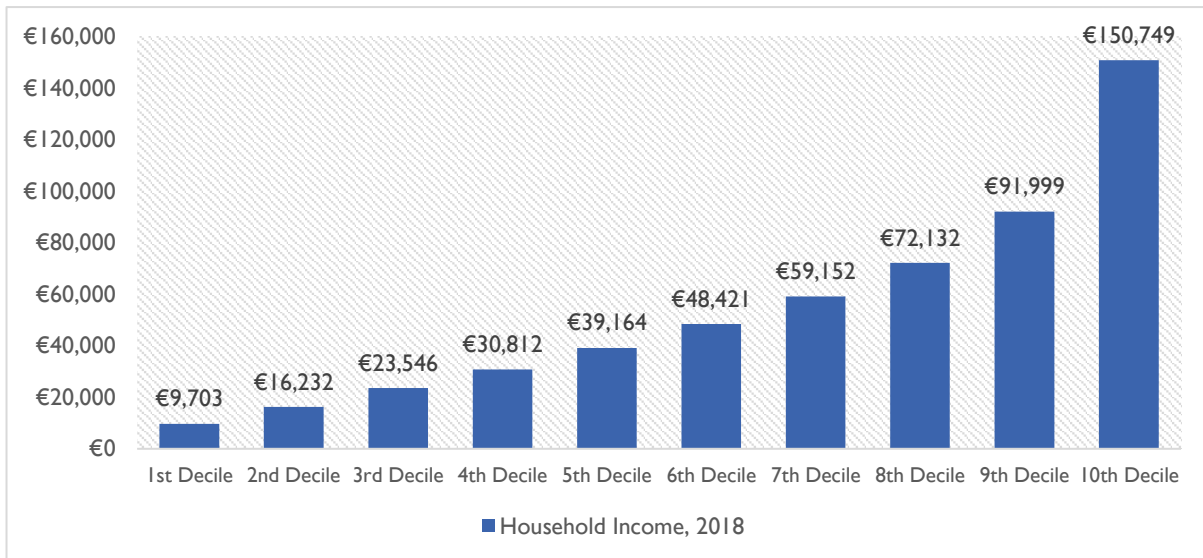


Figure 6.4: Annual Gross Incomes by Income Deciles for Galway, 2018

Monthly household disposal income figures for Galway are also derived from the HBS at a decile level. Disposable income defined as the amount of income, after tax is deducted, that is available for spending and saving. The monthly disposable income figures provided below (Figure 6.5) are based on the upper limit of the income bands for Galway.

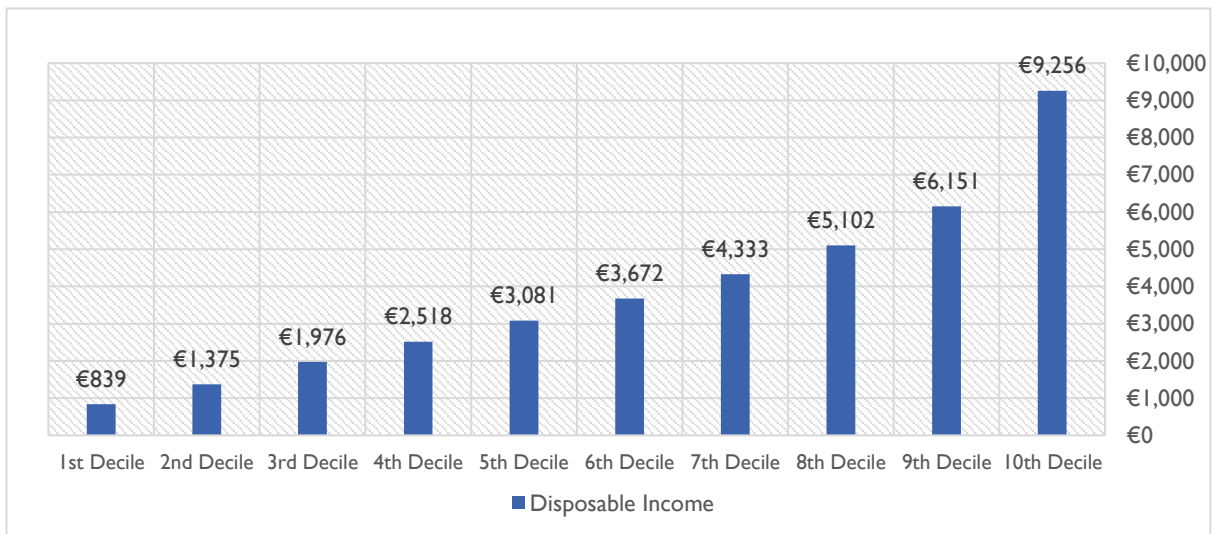


Figure 6.5: Monthly Disposable Household Incomes for Galway, 2018

6.3 FINDINGS

The cost to rent or buy a home in Galway City has grown over the past 6 years in line with the national average and economic recovery post-recession. Cost growth has been considerably higher than income growth over the same period. Despite this growth, affordability for both renters and purchasers has not changed significantly. Privately renting as an option is largely affordable for most income deciles, while house buying is relatively restricted to the middle- and upper decile groupings.

1. Price to income ratio (PIR)

The ability of a household to meet the minimum criteria from the CBI is the primary metric in measuring purchase affordability. A high-level analysis of affordability and Galway income thresholds suggests that, for individuals and households earning roughly the average industrial wage for a full-time employee (€45,611), the cost to purchase at current market prices in Galway City is reasonably affordable. 3 no. scenarios below present scenario based on current market prices:

1. A single person with average earnings of €40,000 (take-home €2,636) looking to buy a 2-bed apartment in Galway City costing €160,000 euro would be able to meet both the CBI regulations and the annuity monthly payments. This would be just at the maximum affordability threshold of 4 times the household income.
2. A couple with a combined income of €65,000 (take-home €3,709) looking to buy a 3-bed house in Galway City costing €237,000 euro would be able to meet both the CBI regulations and the annuity monthly payments. This household would have capacity to increase borrowing by an additional €23,000 to €260,000.
3. A couple on a combined average earnings of €100,000 (take-home €5,124) looking to buy a 3-bed house in Galway City costing €384,000 euro would be able to meet both the CBI regulations and the annuity monthly payments. This household would have capacity to increase borrowing by an additional €26,000 to €400,000.

The results of the Galway City decile analysis indicate that affordability for house buying is primarily available to households in the 5th-10th decile range in 2018. Households in the first 4 decile groups will not be able to afford without a significant down payment or wage increase. Equally, larger unit types (3- or 4-bedroom units) are currently only affordable for those in the upper deciles. Figure 6.6 below represents when market price exceeds the capacity of a decile to afford per unit type. In 2018, households in the 5th decile (>€39,000 annual household income) or higher would have sufficient income to afford either a 1- or 2-bedroom unit. Overall, the relationship of PIR is positive for the majority households that wish to purchase (depending on household preference). The value assigned to each decile below represents 4 times total income available to a household in that decile.

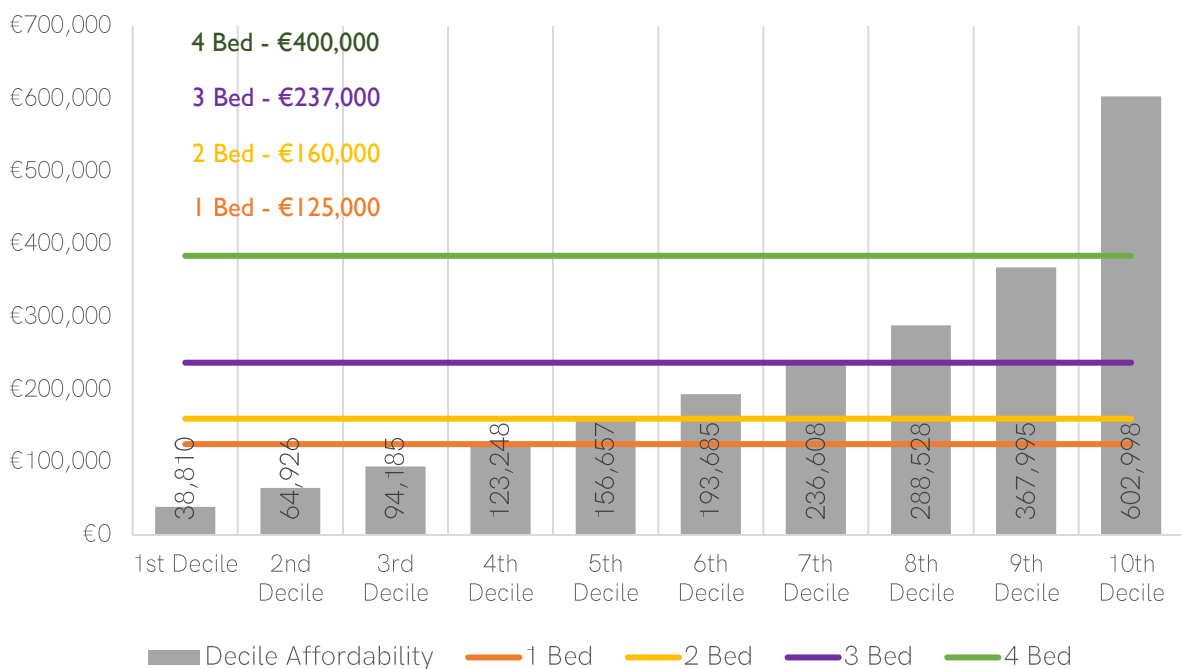


Figure 6.6: Purchase Affordability by Decile and Unit Type for Galway City, 2018

2. Proportion of household income required to rent a home (RIR)

The ability to pay rent is a function of income and thus one simple measure of affordability is the ratio of rent to income. A high-level analysis of affordability and Galway income thresholds suggests that, for individuals and households earning roughly the average industrial wage for a full-time employee (€45,611), affordability is favourable based on the current market rents in Galway City. 3 no. scenarios below present scenario based on current market rent prices:

4. A single person on average earnings of €40,000 (take-home €2,636) paying the monthly rent of €848 for a 1 bed apartment in Galway City would be allocating 32% of net income to the cost of renting.
5. 3 persons on 20k each (take-home €1,523) paying a monthly rent of €381 for a 3-bed apartment in Galway City would be allocating 25% of net income to the cost of renting. This would be significantly under the maximum affordability threshold of 40%.
6. A couple with a combined income of €65,000 (take-home €3,709) paying the monthly rent of €977 for a 2-bed apartment in Galway City would be allocating 26% of net income to the cost of renting. This would be just under the maximum affordability threshold of 40%.

The results of the Galway City decile analysis indicate that households across most deciles can afford to rent their unit preference in 2018. Figure 6.6 below represents when market rent exceeds the capacity of a decile to afford per unit type. In 2018, households in the 4th decile (<€38,000 annual household income) would have sufficient disposable income to afford their preference for any unit type except 3-bedroom. This means that c. 71.3% of households (deciles four-to-ten) can afford their preference in 2018. Affordability increases further if units are being 'Shared' where only households in the first decile cannot meet the affordability criteria. This analysis also suggests that there is scope for rents in the fourth-to-tenth deciles to increase further for those households renting, without decreasing the number of households meeting affordability thresholds. The value assigned to each decile below represents 40% of total income available to a household in that decile.

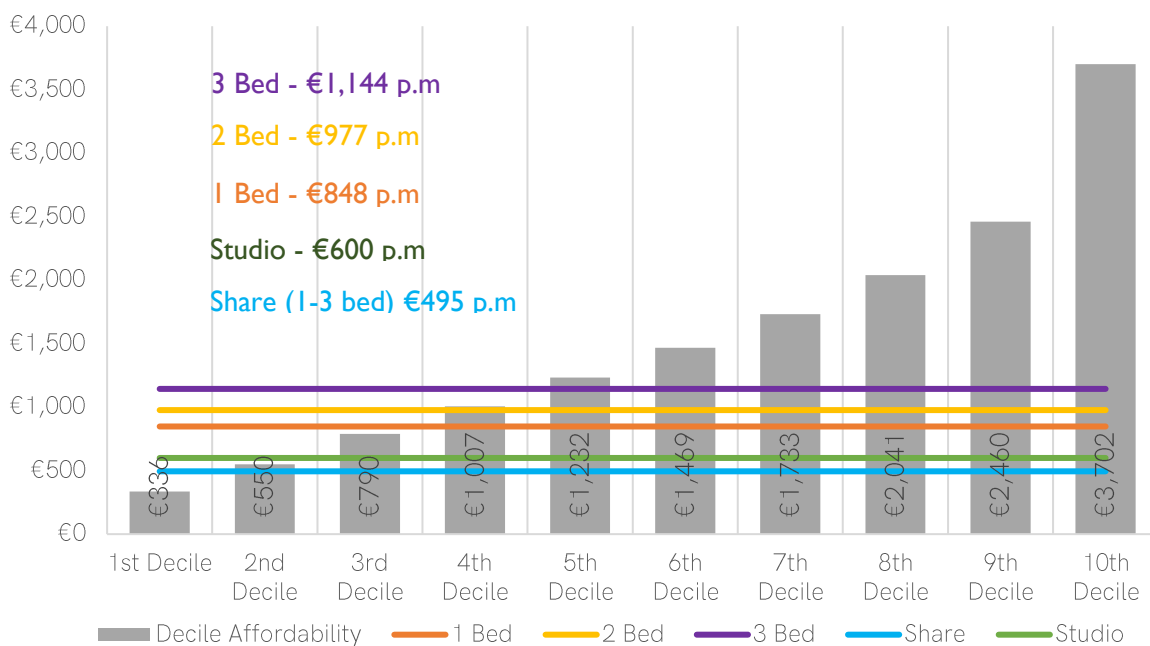


Figure 6.7: Rent Affordability by Decile and Unit Type for Galway City, 2018

7.0 SUMMARY AND CONCLUDING REMARKS

This housing profile and assessment of future needs has indicated that Galway City's population is set to continue growing significantly and may reach between 90,670 (CCM) and 97,870 (NPF) people by 2026. Consequently, **this will generate a minimum housing requirement of at least 8,160 additional housing units (or an average of 816 units per annum)**. This requirement coupled with projected growth throughout the NWRA which may bleed further into Galway City (of between 160,000 and 180,000 people total targeted) will create significant demand for new housing in the City in the short to medium term.

The estimation of housing requirements is informed by population changes and, therefore, does not account for demand (driven by personal preference or policy). **Consequently, the requirement should be considered as being a *minimum* to serve the population and its changes under the influence of recent trends.** Demand in a settlement such as Galway City would be expected to exceed the requirement on the premise that supply is available and/or forthcoming via the development and planning pipeline.

While there are 2,428 units with granted planning permissions in the pipeline for Galway City, the likelihood that they will be sufficient to meet the requirement and demand is in doubt, particularly as over two-thirds of granted applications have not commenced and will expire by 2020.

Given the level of 'pent-up' demand not previously provided for (i.e. just 500 housing units completed between 2014 and 2018) Galway City has, and will continue to have, a latent requirement for additional residential development in the coming years.

Of particular note is the trended change towards 1- and 2-person households. Both will comprise over 60% of all households in the City by 2026, up from 56% in 2016, and the rate of inter-censal trended change places 2-person households as the leading household size.

The market has changed to support a viable and healthy rental sector in Galway, holding an equal share of household by occupancy type. Preference is very strong towards renting now and apartment living in particular comprises almost a quarter of all households in the City; twice the national rate.

Given that a very large proportion of Galway City residents currently privately rent, and that this trend is likely to continue in future years, the city needs to continue to offer suitable, affordable options for private renters to ensure supply is present to meet an increasing demand. The affordability assessment indicates current levels of rent for 1, 2, or 3-bedroom units can be met by 71.3% households and that there is scope for rents to increase further for those households, without decreasing the number of households meeting affordability thresholds. Although, the CBI restrictions on house buying have certainly impacted the ability of low- or middle-income households to afford larger unit sizes, the overall relationship between price to income for purchasers in Galway City is positive.

This report has presented conclusions for developers and planners alike to take account of in carefully considering the most appropriate **unit compositions which align with Galway City's current and future preferred person-household sizes, rental or at least mixed occupancy type solutions and unit compositions which comprise a significant proportion of apartment-type units.**

APPENDIX I

Technical Note: A description of modelling as undertaken



Demographics



Min. Housing Reqs.

Context

The interplay between demographic change and future housing requirements consist of many individual factors such as the drivers of population change, settlement patterns, migratory flows, changing household composition and the supply of housing. Research undertaken by Future Analytics Consulting (FAC) on behalf of Glenveagh Properties Plc (in February 2019) assesses population change and its resulting impact on minimum housing requirements in Galway City.

The following modelling overviews and specification of input assumptions underpin this research, the scope of which was to develop a projection of population covering the period 2016-2031, informed by Census 2016 data as baseline and compared with NPF draft NWRA RSES growth targets. The projection of future minimum housing requirements could then be assessed using the custom projection by applying trended changes in household composition to understand how existing supply will accommodate demographic change.

Modelling Overview: Demographics



Demographics

- Fertility
- Mortality
- Migration

FAC's projection of population is underpinned by the application of the demographic cohort component methodology (CCM); the same methodology as used by the CSO in preparing the national projections.

CCM is widely used internationally as a best-in-class methodology. It provides a flexible and powerful approach to population projection by using varying comparative scenarios, each tailored around the application of qualified assumptions in mortality, fertility and migration (as aligned with the CSO's assessments).

The methodology applies key assumptions in fertility, mortality and migration year-on-year over the assessment period, at single year of age and gender. In doing so, the population is aged through the model, impacted by migratory inflows and outflows and mortality.

In considering a suitable basis for projection, FAC developed a series of scenarios, each with respect to the most recent national and regional assumptions published by the CSO, but also with specific regard to the latest Census 2016 data and published data (more recently released) on fertility and migratory flows (both internationally and between counties). After assessing different scenarios, M1F1-aRAdj was selected as the preferred option.

A scenario named M1F1a(ligned)-R(ecent)-Adj(usted) or M1F1a-Radj was selected as the preferred option.

M1F1a-Radj relates to assumptions in fertility and migration (principally) which align with the CSO's published M1 and F1 outlooks (see below). It maintains the recent (inter-censally observed) net outward flow from Dublin, which we believe will not decrease towards net neutral by 2022 but is set to increase (as played out during the period 2002-2011). Dublin's inward and outward flows impact all of Ireland's regions, counties and settlements.

- **Fertility**
Full year fertility data for 2017 (Vital Statistics, CSO May 2018) was used to develop a baseline for each County's birth rate. Age-specific fertility rates were derived (births per thousand for women of child bearing age) and rates then linearly interpolated to achieve a Total Fertility Rate (TFR) of 1.8 by 2026. Therefore, this aligns with CSO F1 over the longer tail, but opts for a gradual reduction to 1.8 TFR so as not to over-adjust counties where fertility is presently above the national average.
- **Mortality**
No change was made in using the published life tables from the CSO (Irish Life Tables No. 16, CSO July 2015), though it is recognised that mortality has fallen for men and women since their publication (the CSO have yet to publish updated data). The principal assumption of gains in life expectancy at birth from 77.9 years in 2010 to 85.1 in 2046 for males and 82.7 years in 2010 to 88.5 years in 2046 for females was carried forward.
- **Migration**
The M1 CSO outlook for national net migration, assumes a steady continuation of high levels of net inward migration at 30,000 per annum, repeating. When this research was conducted, the latest available indication of net inward migration was 19,800 in 2017 and 34,000 in 2018. Therefore, M1F1aRadj assumes a gradual reduction back to the reoccurring level of 30,000 net inward beyond 2021.

The continuation of high levels of net inward migration to 2031 is therefore premised on the prevailing trends which can be expected to continue in line with improving economic conditions of the economy at large and the pull of various sectors in attracting outside employees and students to Ireland.

Migration was assessed at regional and at county level. A migration matrix was developed to simulate future inflows and outflows between counties, informed by inter county and settlement size flows (CSO, 2018). A generalised growth rate per county of 0.25% was applied to both inflow and outflow totals per annum and a specific spatial assumption applied to move migrants towards Dublin and the Mid-East generally. This forms the basis of the 'Recent' assumption as featured in the scenario name.

This is in keeping with observed trends since 2006 and specifically carries forward the observed change in Dublin's net allocation. Unlike 2006-2011, where Dublin experienced a slight net inward surplus of migrants, Dublin has now returned to almost +4,500 net outward migrants per annum – as people settle in the surrounding counties, and this trend is set to continue.

As a consequence, Galway and the Western Region benefit from increased inward migration.

Cohort Component Method

Utilised as the basis by which each scenario was projected, the cohort component method (CCM) for population projection is widely used internationally as a best-in-class methodology which provides a flexible and powerful approach to population projection.

CCM can incorporate many application techniques, types of data and assumptions regarding future trends. It can also be used at any level of geography (given data suitability) and perhaps most importantly, it provides projections of total population, demographic composition and individual components of population growth by applying key assumptions in fertility rates, mortality rates and migration rates per year of projection across the duration of the period.

Future populations are derived from a base population through the projection of population change and its major demographic components, births, deaths and migration. The projection of the demographic components of change is driven by the composition of the population by age, sex and birth rates, and the way these variables determine the propensity to bear children, die and migrate to, from or within Ireland.

Knowledge of the age and sex composition of the population at any point in time is fundamental to the projection of the population. Knowing the age-sex distribution at one date (2011) allows us to impute the age-sex distribution of those still alive at later dates, since sex does not change while age advances with the passage of time. This knowledge also allows the projection of demographic behaviours (above) as differentiated by age based upon past trends and expert opinion in order to introduce confidence and mitigate uncertainty.

In its simplest statement, the component method is expressed by the following equation:

$$P_t = P_{t-1} + B_{t-1,t} - D_{t-1,t} + M_{t-1,t} \quad (1)$$

where

P_t	= population at time t ;
P_{t-1}	= population at time t-1 ;
$B_{t-1,t}$	= fertility, in the interval from time t-1 to time t ;
$D_{t-1,t}$	= mortality, in the interval from time t-1 to time t ; and
$M_{t-1,t}$	= net migration, in the interval from time t-1 to time t.

Components of population change are projected separately and applied to equation 1 recursively to produce a series of populations. The measurement unit of time may be of any interval from t-1 to t, however, the impact of each component will vary over time.

This logic is also true for individual age groups, recognising that the source population for a given age group is the population at time t-1 in the adjacent younger age group. For the initial age group, it is births during the interval from t-1 to t, hence the 2011 base figure for under 1's is used. Equation 1 is replaced by two equations, depending on whether the age group is under 1, denoted as 0, or any other age, denoted by a.

$$P_t(0) = B_{t-1,t} - D_{t-1,t}(0) + M_{t-1,t}(0) \quad (2)$$

$$P_t(a) = P_{t-1}(a-1) - D_{t-1,t}(a) + M_{t-1,t}(a) \quad (3)$$

Each of the terms in equations 2 or 3 whether defined as a population or a number of events, relates to people born in a particular year. Such a group is known as a birth cohort, hence the term "cohort component method".

Modelling Overview: Minimum Housing Requirements



Min. Housing Reqs.

- Population Projection
- Intercensal Trends
- Vacancy Rates
- Household Composition
- Housing Stock
- Obsolescence

FAC's projection of future minimum housing requirements is a product of evaluating the impact of a changing demographic across each settlement and rural area in Ireland.

This change will have a significant effect on the utilisation of existing housing stock and will give rise, in many places to a deficit should supply lag behind.

A key component is the application of the population projections which are used to assess how each individual settlement and rural area will undergo shifts in their age profile and how people coming into the area, as well as leaving it, impact on the rate of change in that area.

Various intercensal trends in housing characteristics are assessed as well as Census 2016 data being actively utilised as baseline inputs in order to build a profile for each area. Vacancy rates (excluding holiday homes) and an assumed rate of obsolescence are also applied to factor in restrictions and natural depletion of the existing housing stock (this rate varies across the country but is in the region of 0.3 - 0.8%, the rate of 0.5% is taken).

Household composition plays a key role in understanding the settlement pattern within each area. Specifically, it covers households by number of persons resident and varies greatly between settlements of different sizes, economic roles and geographic locations (for many reasons). Over time this describes how people in the area have chosen to form households of different sizes, for one reason or another, and does so more accurately than average household size (another measure for describing households).

The compositional profile of an area in this regard has a marked bearing on future housing utilisation, should trended patterns continue to apply – essentially shift in compositional occupancy. An assessment has been made in this research of Census data stretching back to 2002 to inform such trends.

As the population changes, the utilisation of existing stock also changes – in line with increases and decreases in person-household size. In this research an area's future population is distributed proportionally in line with its characteristic profile (its projected occupancy pattern), and the resulting quantum of homes required can be determined.

By assessing the existing stock (after depletion) against the number of homes required, a minimum requirement can be identified should a shortfall exist in the existing stock.

In some cases, a settlement's existing housing stock will be adequate to cover future requirements as they arise, even excluding stock held in frictional vacancy. However, since 2011, such surpluses have been rapidly eroded, and many formerly vacant units have come back into use as needed.

In Summary

A *minimum housing requirement* provides an indication as to a potential shortfall in housing supply in an area due to demographic changes primarily. No assumptions are made with respect to capacity, affordability, latent demand or desirability. Furthermore, no assumptions on housing supply (such as planned pipeline developments) are included. In this regard, any identified requirement can largely be offset by such additions.

A principal determinant of the identified minimum requirements is derived from how an urban settlement's occupancy composition is trended to change over time. Celbridge, County Kildare, for instance, is set to continue to experience a shift towards two and one-person households over three and four-person households; mostly at the cost of five or more person-households. This shift is felt incrementally but over an extended period and in centres of higher population, it can amount to large shifts in the population's selection and preference towards housing-type. Provision must keep this consideration in mind.

The increased pressures on an urban settlement's housing stock as a result of this form of occupancy shift (either from preference or economic necessity) has a marked impact on the depletion of available stock. The decline in average household size (AHS) has been known for many years, but the consideration of AHS alone can mask the reality of how the populace's behaviour has truly been observed to shift towards different household sizes – and not just one size fitting all.

This profile of occupancy shift varies between each urban settlement, with some of those identified showing strong shifts to one and two-person households, whereas others show a resurgence in three-person households far above the growth of one-person households. Further analysis relating to these shifts can be queried from FAC directly.

Further details on both the demographic and housing requirements modelling processes are available upon request from Future Analytics Consulting